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ABSTRACT

The final report of the Head Injury Re-entry Project (Project HIRe) describes activities of this 3-year (1987 to 1990) project, which used a "best practices" model approach and a community-based employment strategy with persons having traumatic brain injury (TBI) in nonurban areas. Among 15 project accomplishments are the following: (1) two conferences addressing TBI and community-based employment; (2) identification of critical issues; (3) dissemination of conference audiotapes, journal articles, and a book; (4) establishment of networks of persons with similar interests; (5) demonstration of the HIRe model at two replication sites; and (6) direct services to 27 individuals with TBI during the model demonstration. Persons served in Project HIRe had multiple physical disabilities in addition to the social, emotional, and cognitive problems caused by the TBI. Individual supported employment proved to be a viable option; however, removal of support services and project termination resulted in transfer from scattered sites to enclave sites where there were lower wages and less independence on the job. Recommendations focused on significant barriers to rural service delivery, particularly the need for a long-term funding stream to assure services necessary for sustaining people on jobs and the impact of low-incidence TBI on the quality of services available. Appendices include the instruments used for case management and program evaluation and a sample contract. (Contains 13 references.) (DB)

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Head Injury Re-entry Project (Project HIRe)

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The Research and Training Center
UNIVERSITY OF WISCONSIN-STOUT

DEVELOPMENT, IMPLEMENTATION, AND VALIDATION OF SUPPORTED EMPLOYMENT MODEL(S) FOR TRAUMATICALLY BRAIN INJURED PERSONS

HEAD INJURY RE-ENTRY PROJECT (Project HIRe)

FINAL REPORT

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Preface

To complete a project as ambitious as the Head Injury Re-entry Project (Project HIRe), required an extraordinary collaborative effort on the behalf of many people. This project report is dedicated first of all, to the persons with traumatic brain injury and their families and friends from whom project staff learned what is difficult to describe in simply quantitative terms. Persons with brain injuries served as project staff, members of advisory committees, authors, lecturers, supporters, conscience, friends and advisors.

In order to guide and assist the project, a host of persons served as clinical advisors and peer reviewers for the Think Tank, National Conference, professional papers and the text on "Community-based Employment Following Traumatic Brain Injury" which is nearing completion at the time of this writing. This advisory committee volunteered many hours to assist in the completion of project goals. Our profound gratitude is extended to Mr. Gary Wolcott, Dr. Mitchell Rosenthal, Dr. James Malec, Dr. Thomas Hammeke, Dr. Daniel Keating, and Mr. William Johnson.

Project staff at the University of Wisconsin-Stout provided efforts central to, the developmental stages, conduct and execution of Project HIRe. Sincere appreciation for their contributions are offered to Deb Houts Daley, Karen Czerlinsky and Tom Thorsness for the start-up activities. A special commendation must be given to staff member Audrey Nelson who survived numerous training and technical assistance consultations, graduate school, two babies and a war during her appointment as program coordinator. Sharon Zachow who compiled much of the data from assessment instruments and profiling forms for this report has our sincere gratitude.

Staff of the University of Wisconsin-Stout Projects with Industry Program and Vocational Development Center, Indianhead Enterprises, Inc. in Menomonie, Wisconsin and the Ability Building Center in Rochester, Minnesota deserves our heartfelt thanks and admiration for their contributions to serving persons with traumatic brain injury in community-based employment, and assisting in promoting programs and services to persons who have survived a traumatic brain injury.

Our deepest appreciation is offered to clerical staff responsible for coordinating conferences and training, preparation of manuscripts and media presentation, and publications. Thank you Jean Davis, project secretary for sticking to this project from beginning to end and for preparation of this final document. Finally, thanks to our graduate assistants and colleagues of the University of Wisconsin-Stout for your patience and support of this project.

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Chapter 1

EXECUTIVE SUMMARY

The Head Injury Re-entry Project (Project HIRe), a model demonstration and research project, was conducted by the Research and Training Center at the University of Wisconsin-Stout Rehabilitation Research and Training Center between 1987 and 1991. The project followed a model development and demonstration design in an effort to develop a "best practices" approach to meeting the needs of persons with traumatic brain injury in nonurban areas using a community-based employment strategy. This model represented a comprehensive approach, founded on the commonalities among suggested supported employment practices for person with traumatic brain injury and practices found useful in serving individuals with other disabilities in rural communities. Information from several sources including surveys of professionals and consumers, and research findings from other project activities were used to modify the pilot model developed by this project and to prepare the model for replication, evaluation, and dissemination. Year one of the project was devoted to model preparation, materials and instrument development, and knowledge exchange. Years two and three focused on demonstration, replication, and evaluation of the model.

Project Goals

The purpose of this project was to develop a model approach for providing community-based employment services to persons who reside in rural areas and are severely disabled as a result of a traumatic brain injury. In order to accomplish this, a program was developed using input from a variety of sources brought together through this project and from which the HIRe Model developed. These sources included information derived from a literature review, input from a national clinical advisory committee, information obtained through a national Think Tank and a national conference on community-based employment and traumatic brain injury sponsored by the project. Field experience gained while providing services to severely handicapped persons who have survived a traumatic brain injury helped to validate and field test experimental hypotheses.

The principal components necessary for providing a community-based employment program to persons with traumatic brain injury in predominantly rural areas were identified, combined, and tested. An applied set of procedures and processes were developed, including file maintenance procedures, intake procedures, coordination and modification of new or existing rating instruments or data collections forms, training of staff at each of the sites, and development of implementation procedures for using this model. Therefore, preliminary efforts involved determining whether a model program could be developed and implemented which would show promise in similar areas.

Demonstration and Research Objectives

No comprehensive models for conducting community-based employment with traumatically brain injured persons in rural areas existed at the beginning of this project. It was

therefore necessary to design, plan, pilot test, validate, and replicate such a model. This project convened national leaders in vocational rehabilitation and brain injury rehabilitation and worked collaboratively with other model development and clinical projects in order to identify suggested practices for establishing, providing, and maintaining such programs. Specific process objectives included the following:

1. Identify suggested practices for providing community-based employment specifically tailored for nonurban communities.

2. Develop, implement and demonstrate a community-based employment model for nonurban communities.

3. Host a think tank and national conference on models of community-based employment in cooperation with the National Head Injury Foundation.

4. Develop training programs, media presentations and publications on community-based employment for subsequent dissemination.

5. Establish a collaborative relationship between this project and similar projects funded by NIDRR at the Wisconsin and Minnesota state vocational rehabilitation agencies to share information on approaches, outcomes and characteristics.

6. Formulate and pilot an initial model in order to identify essential components of the model and develop strategies, and processes for field replication.

7. Conduct a replication study of the HIRe Model.

These process objectives guided the activities necessary for establishing and testing the model. A Clinical Advisory Committee was established to help monitor the project. This committee also reviewed suggested practices, suggested rating scale instruments, and discussed processes for collecting and documenting information. The Clinical Advisory Committee advised project staff regarding approaches to working with consumer groups and assisted in the exploration and interpretation of data on methods used in the implementation of the project and model. In addition, the Clinical Advisory Committee was used to (a) guide the process of the Think Tank and the National Conference which identified the issues and barriers to community-based employment for persons with traumatic brain injury, (b) address and document these issues in the form of training tapes and a text on solutions to the problems and issues raised during the Think Tank, and (c) elaborate upon these issues during the National Conference.

Collaboration with other projects, clinical sites, joint training programs, and availability of expertise among members of the Clinical Advisory Committee helped provide content validations of the emerging clinical practices and instrumentation.

Staffing and Management

The project director/principle investigator, and other staff of this project were existing staff of the Research and Training Center. The Director of Research at the Center served as a research design consultant and actively participated in all aspects of the project design and implementation. Clerical support staff available to the project assisted in necessary publications and promotional materials. A full time project coordinator was hired during the first two years of the project to help implement the research and to promote development of the project at each of three sites. In the third year of the project, this position was reduced to half-time and contracts were developed with two private not-for-profit rehabilitation facilities to serve as replication sites and provide job coaching services to persons served in the project. These funds were by no means sufficient to be a primary funding source for job coaching, but were rather provided to assist the facilities in collecting the necessary data required by the project and to participate in staff training in the project.

Participating Pilot and Replication Sites

The model developed for this project was piloted at the Research and Training Center and Clinical Services Units of the Stout Vocational Rehabilitation Institute at the University of Wisconsin-Stout. Once the components of the model (data forms, process, and procedures) were revised, two additional sites were selected for replication. Both replication sites were at vocational rehabilitation facilities with considerable experience in providing rehabilitation services and some experience in providing community-based employment to persons with severe disabilities.

One site was developed at Indianhead Enterprises, Inc., a rehabilitation facility in Menomonie, Wisconsin. This facility is situated in an industrial park in a small town in rural Wisconsin which serves smaller townships and communities in the surrounding area. The second site was the Ability Building Center, located in Rochester, Minnesota. Although Rochester, Minnesota is considerably a larger city than Menomonie, this facility provides services to persons from a large geographic region, many of whom resided in rural areas and small towns.

At each of the sites, one person was selected as a primary contact. All staff providing front line support services were trained in the HIRe approach to community-based employment. Both facilities had experience in dealing with community-based employment and the Ability Building Center had considerable experience in providing services to persons with traumatic brain injury.

The Final Project HIRe Model

The HIRe Model was designed for use with persons with traumatic brain injuries in non-urban and predominantly rural areas. The approach used in this program provided community-based employment for persons with traumatic brain injury using a three stage approach including assessment and planning, community-based employment and training, and maintenance.

The HIRe Model was designed to accommodate needs of rural areas, where extensive

resources are limited, and staffing limitations preclude the development of complex service arrangements or centralized service locations typically found in larger cities. Rural areas for the purpose of this document refers to areas under 2,500 people, or areas where a substantial percent of the persons served live in communities of under 2,500 people. In some cases, cities from 12,000 to 60,000 serve as "hub cities" in which transition services to persons with traumatic brain injury are provided. The majority of people included in the project resided in farming communities, with limited resources necessitating car travel to rehabilitations facilities or employment sites.

The HIRe Model assumes that the information available from hospital records, families and survivors, and neuropsychological evaluation reports, can be used to help structure a prescriptive vocational evaluation. Information from these sources is considered critical to structuring a viable rehabilitation process based on individual needs. A premise of the model is that critical background data needs to be provided to develop transitional community-based employment programs. A neuropsychological evaluation or consultation and a prescriptive vocational evaluation are necessary components of a community-based employment program.

The model uses a team approach to identify available community resources and to profile background neuropsychological, medical and background information in functional terms understandable to lay workers who have had specific training in the needs and treatment provision for persons with a traumatic brain injury. Once initial assessment and training has been completed, a less intense model of service delivery is typically necessary. This model uses an employment training specialist who has received cross-training in vocational evaluation, job placement and traumatic brain injury rehabilitation. This employment training specialist functions in the long-term tradition of a "disability specialist" and also serves as a primary liaison between all other professional providers. This person is also responsible for a small caseload involved in community-based employment. The employment training specialist later relinquishes the responsibilities of ongoing services to a long-term (maintenance) job coach who has had less intense training in traumatic brain injury rehabilitation. The maintenance job coach provides the long-term and ongoing support needed for that person, with consultation of the treatment team if problems arise.

Subsequent vocational services are available through the employment training specialist and a zero reject concept for re-entering the person back into the service end of this employment training program. In this manner, one employment training specialist is able to work several persons at various stages of intake, job site evaluation and initial transitional employment training. Eventual fading of intensive up front services, and increased involvement of the traditional job coach in a maintenance role as work related problems are identified is expected.

This HIRe Model requires the use of ongoing community resources to fund a long-term job coach and long-term community-based employment requirements. A case manager responsible for attending to nonwork related issues may also be necessary. If nonwork problems are minimal, a rehabilitation counselor or case manager in a rehabilitation facility may serve this role. For cases with more intense community integration needs, clinic based case management organizations may need to be used to deal with off-the-job support and interaction services.

Project Accomplishments

Fifteen major accomplishment resulted during this project, including the demonstration of the HIRe Model:

1. The one-day Atlanta Think Tank in 1988 helped to identify issues in community-based employment for survivors of traumatic brain injury. This Think Tank attracted leaders in vocational and medical rehabilitation. Fifteen presenters addressed issues and 47 others participated as reactors.

2. The Clearwater Beach Conference on "Traumatic Brain Injury and Community-based Employment" conducted in 1989 was based on the issues and ideas established during the Think Tank. Over 100 keynote, paper, panels and poster presentations were made at this two-day conference. A total of 215 persons attended.

3. Critical issues for developing effective community-based employment programs and issues yet to be resolved in forming meaningful public policy were identified, developed, and shared with the National Head Injury Foundation, federal agencies, and other professional and consumer groups.

4. A set of four audiovisual tapes containing an overview of the Clearwater Beach Conference and highlights of the presentations made on effective programs, assessment practices, and public policy issues discussed at the conference were produced.

5. A limited number audio tape sets from the Conference and from the Think Tank were also produced.

6. An article on vocational evaluation was published in a journal and two chapters were published in "Traumatic Brain Injury and Vocational Evaluations" a text on community-based employment of persons with traumatic brain injury.

7. A journal article was produced by investigators involved in this study which appeared in a national publication. Primary issues facing the delivery of community-based services to persons with traumatic brain injury were identified and discussed.

8. "Community-based Employment Following Traumatic Brain Injury," a book of specially prepared papers based on state of the art issues in traumatic brain injury and vocational rehabilitation, was developed and published.

9. A complete set of materials for documenting background information, profiling functional assets and limitations and on-the-job assessment

protocols were developed.

10. Networks of persons having similar interests were established including persons involved in the Think Tank and National Conference. Through the resources of the Mayo Clinic Brain Trauma Outpatient Program and the Medical College of Wisconsin Department of Psychiatry (Neuropsychology), additional peer reviews of critical issues were completed.

11. Networks were developed with the two other funded projects in the area as well as with similar such projects across the nation involved in collaborating in the Think Tank, National Conference and numerous resulting publications.

12. The HIRe Model was demonstrated at replication sites in Rochester, Minnesota, and Menomonie, Wisconsin.

13. Issues critical to the application of community-based employment with this population were identified.

14. Twenty-seven persons affected by traumatic brain injury were served under the model during the model demonstration.

15. An agenda for a follow-up conference on community-based employment practices with traumatically brain injured people was proposed. This conference was subsequently held in Philadelphia in October of 1991.

Impacts of HIRe Model

Characteristics of persons served. Persons served in Project HIRe were found to have multiple physical disabilities and resulting functional limitations in addition to the social, emotional, and cognitive problems caused by the traumatic brain injury. Primary difficulties tended to be in the areas of attention and concentration, memory, strength and coordination, stamina, psychosocial and interpersonal skills problems, limitations in cognitive flexibility, lack of insight into the nature of personal and vocational problems, and secondary emotional problems.

Impacts of community-based employment in rural settings. If adequate support services can be maintained both on-the-job and off-the-job and assistance in job placement, persons with severe and significant residual impairments and functional limitations as the result of a traumatic brain injury can work at competitive community-based jobs. In addition, other individuals who are not able to be competitively employed, can be placed on community-based jobs at less than minimum wage, or in volunteer situations which enhance their probability of community integration and independence in social and vocational functioning at a later date.

Despite the fact that services may not be available in one central location in rural areas, if sufficient up-front case coordination can be provided such that assessments, therapies, and

connections with service providers are established, support services in local communities will foster community-based employment of these persons. Persons who tended to fail on the job were those with psychiatric related difficulties, medical emergencies, and those who did not demonstrate a motivation to continue. Since these traits tend to eliminate persons from community-based employment situations in urban settings as well, they were not seen as significant barriers to employment caused by the rural environment.

Individual supported employment proved to be a viable option for persons served in this project, however, the removal of support services resulted in lower wages and less independence on the job. At a 3-month follow-up after additional support services were withdrawn due to termination of the project, all persons in one replication site were transferred from scattered sites to enclave sites which typically paid less money. A similar circumstance occurred at the other replication site.

Recommendations From the Project

Model development. The Project HIRe Model developed under this demonstration project took considerable time and effort to define the variables to consider in providing services. However, these efforts appeared to make a contribution to the field insofar as the advancement of knowledge through collaborative research and information dissemination, the collection of similar data at multiple research sites, and the publication of information in the form of multimedia presentations and publications. Due to the effort necessary to develop and pilot test this initial demonstration model, it is suggested that long-term prospective research studies be conducted with the instrumentation developed and piloted as in this process.

Significant barriers to rural delivery. The greatest barrier to providing services in rural areas was the establishment of a long-term funding stream to assure services necessary for sustaining people on jobs. Long-term supports including the assistance of job coaches, independent living caregivers, persons to perform emergency and intervention services, and services connected with crisis intervention providers were seen as essential elements for a successful employment program. Clearly, a need to identify methods of obtaining such service funding, and mechanisms for identifying the appropriate parties for providing such services does exist.

The second greatest problem identified was the impact of low incidence of traumatic brain injury in rural communities on the quality of services. The relatively low incidence of traumatic brain injury in rural areas was due to a smaller population base in and of itself. Those providing community-based services tended to be less well trained, had less experience in working with persons with traumatic brain injury, and therefore have less experiences to draw from in the shaping of an individual's community-based services than was observed in similar urban projects.

Anther difficulty which was readily apparent was the limited number of qualified traumatic brain injury professionals in rural areas. Central resource networks in any geographic area which could provide consultation and mentorship services to evolving programs and programs having only a few such cases per year could help to alleviate this problem. Efforts by individual states to establish liaison workers in various parts of each respective state could

help to attack this problem. The establishment of highly qualified and experienced liaisons within state vocational rehabilitation agencies could provide valuable assistance in this arena.

A final barrier to vocational rehabilitation of the traumatic brain injury survivor remains the relatively high turnover rate among first line service delivery personnel in the community-based employment networks. In this project, complete staff turnovers occurred at all three sites in which this program was pilot tested and replicated. Conversations and consultations with other rural service providers also indicate that this is a major problem. Part of the difficulty arises from the low levels of funding available for community-based employment service positions. Another is the amount of additional services demanded by consumers but not available. Lack of adequate training and limited access to assistance when problems arise are significant problems in rural areas.

Without adequate individual worker support, regardless of the background and training of the job coach or case manager, scattered sites were nearly impossible for either of the replication sites to retain. Funding of long-term supports therefore proved to be a key issue, apparent only after termination of the project when additional support services were not as readily available.

An observation of the Principal Investigator during the course of this Project was that wide variations in availability or quality of vocational rehabilitation services to traumatic brain injury survivors fluctuated with staff stability. Of the many employment programs for traumatic brain injury survivors contacted, including programs accredited by the Commission on the Accrediation of Rehabilitation Facilities (CARF), the promotion or resignation of key staff members and shortage of experienced replacements seriously affected service delivery and in some cases led to suspension of traumatic brain injury services altogether despite an apparent solid history of services by the host facility.

Chapter 2

DEVELOPING THE MODEL

Project HIRe was initiated as a means of exploring feasible methods for placing persons with traumatic injury into community-based employment situations in predominately rural areas. In this project, rural areas were defined as portions of the country which are represented by towns and townships which are generally under 2,500 people, or if the size of the city in which the service is being provided is larger than this, the majority of the persons served live in areas of under 2,500 people. In some cases, cities from 12,000 to 60,000 may serve as "hub cities" in which transition services to persons with traumatic brain injury are provided. The majority of all people involved in the project were residing in farming communities, with limited resources.

The primary difference between providing community-based employment in urban versus rural areas at the onset of this program was believed to be the fact that less expertise and less support services were likely to exist in smaller towns. In the broadest sense, the input received through the conferences, committee meetings, and publications produced through the project helped to define many of the important parameters of community-based employment programs. The project examined various approaches to support at its pilot site and, eventually, at two replication sites. In essence, this project strived to conduct primary research to investigate the variables necessary to track and follow people into community-based employment programs and attempted to apply these insights to programming in rural areas and to document the effects of such a model.

Funding for Project HIRe Activities

Primary funding for this research was provided through the United States Department of Education, National Institute of Disability and Rehabilitation Research. Funds were provided over a three-year period. The project was extended for an additional six months at no additional cost to the project. These funds provided the impetus for the initial project involvement and stimulated the development of the Conferences which served as a catalyst for developing this model and influencing how other models were developed in Wisconsin and Minnesota.

Whenever possible, several sources of funds were sought to promote and optimize the funding to achieve the various goals of this grant. For example, the materials from the Think Tank and the development and planning of activities associated with the National Conference were initiated using dollars from this grant to complete brochures, arrange meeting times, and assist traumatic brain injury survivors to attend meetings. The cost for producing the proceedings from the Conference and training materials resulted from proceeds from those conferences and, to a limited degree, from in-kind contributions from the National Head Injury Foundation and other participating groups.

Role of the Clinical Advisory Committee

The role of Project HIRe's advisory committee was expanded from what was originally described in the initial application. The broader responsibilities included peer review of papers for identification of issues and suggested best practices, selection of processes and procedures for developing the program model, and selection of participants for the National Think Tank and Conference. The seven person committee included representatives with considerable training and experience in research methodology, clinical and rehabilitation psychology and client advocacy. These individuals who are identified below, remained active throughout the project.

Dale F. Thomas, Ph.D., Research and Training Center
Fredrick E. Menz, Ph.D., Research and Training Center
William Johnson, M.S., Research and Training Center
Mitchell Rosenthal, Ph.D., Marionjoy Rehabilitation Hospital
Jeffrey S. Smigielski, Ph.D., Mayo Clinic
Thomas Hammeke, Ph.D., Medical College of Wisconsin
James Malec, Ph.D., Mayo Clinic
Gary Wolcott, National Head Injury Foundation
Daniel Keating, Ph.D., Drucker Brain Injury Center

Participation of Survivor and Advocates

The National Head Injury Foundation, was actively involved throughout project. The Foundation cosponsored the Think Tank and National Conference, and was active on the Clinical Advisory Committee. In addition, several members of the National Head Injury Foundation Executive Committee and Survivor's Council were also included in this process. Funding for survivors to attend the National Conference and Think Tank was provided through the resources of this grant. This important liaison helped the project to be sensitive to the perceptions of not only persons in professional roles but also those of persons in consumer roles and those who themselves had survived traumatic brain injury.

Collaborating Organizations

The intense national interest in the activities affiliated with the Think Tank, National Conference and the Project HIRe demonstration project was responsible for involving a broad range of agencies and collaborators. The collaborators which were involved throughout the project were the following agencies:

The Medical College of Wisconsin, Section of Psychiatry (Neuropsychology), Milwaukee, WI
Mayo Clinic, Outpatient Brain Injury Program, Rochester, MN
Marionjoy Rehabilitation Center, Chicago, IL
The National Head Injury Foundation, Washington, DC
Moss Rehabilitation Hospital, Philadelphia, PA
Michigan Division of Vocational Rehabilitation
Stout Vocational Rehabilitation Institute, University of Wisconsin-Stout, Menomonie
Wisconsin Division of Vocational Rehabilitation

Minnesota Department of Rehabilitation Services
National Institute on Disability and Rehabilitation Research, Washington, DC
Rehabilitation Services Administration
Ability Building Center of Rochester, MN
Indianhead Enterprises, Inc. of Menomonie, WI

Input From the Think Tank and National Conference

A National Think Tank on issues relevant to community employment and integration of traumatic brain injury survivors was conducted to identify critical issues in the design and delivery of community-based employment. This was followed by a national conference on the same topic to further explore the contemporary models and practices in putting effective models into place.

Input From the Design of the Center's Research

Project HIRe was initiated at a time when numerous projects of the RTC were underway which contributed to the overall research strand of vocational rehabilitation and traumatic brain injury. Likewise, the knowledge gained and the contacts established aided in the accomplishment of the objectives of Project HIRe. One of the Center's related projects which was underway at the time that Project HIRe was funded, involved the development of instrumentation to profile individuals on the basis of neuropsychological, social adaptive, and physical variables. These profiling forms were reviewed by the Clinical Advisory Committee and additional input was received at the time of the Think Tank and Clearwater Beach National Conference.

The participants at the Atlanta meeting provided opinions of the importance of 203 variables identified through a literature search and edited by the steering committee. These variables represented important characteristics to consider when planning the community-based employment of persons with traumatic brain injury. The Vocational Assessment Protocol was established to profile the information deemed to be most critical by these processes. This provided an important method for linking between neurological consultancies and vocationally planning with individuals affected by brain trauma.

Another aspect of the Center's collateral projects which aided in the execution of Project HIRe was the completion of the book entitled "Traumatic Brain Injury and Vocational Rehabilitation" which was completed in 1990. This book detailed background and characteristics of survivors of traumatic brain injuries and the types of service needs that are typically unmet in the vocational rehabilitation system. The chapter on vocational evaluation was used extensively in in-service training and was incorporated in the methodology of assessment within the Project HIRe Model. Although the book was completed at the end Project HIRe, draft copies had been available for 18 months prior to the publication date, and were used in staff preparation, and provided the impetus for completing the book was in part due to the demands for training which were prompted by the Think Tank, National Conference and regional training programs conducted Project HIRe.

Input Through Inter-Project Collaboration

The state vocational rehabilitation agencies in Wisconsin and Minnesota which were also grant recipients for research in this area, participated in a series of four meetings locally, and also shared in the development of the program agenda for the Think Tank and subsequent National Conference. Specific program evaluation data gathered at each of the sites, and the dependent and independent variables included in each of the respective research project designs were agreed upon by the end of Project Year One. The Research and Training Center agreed to assume the coordination lead in developing the meetings in which projects were discussed. Staff were able to exchange information. Four domains of data were identified as important to include in each organization's respective data set: client characteristics, outcomes (employment and integration), services required for support, and details of various program models.

Instrument development and information sharing. Several data collection forms were collected by all three agencies receiving grant funding. The Daily Monitoring Forms, which were used on a limited basis by the Minnesota agency project and with all clients involved in the Wisconsin agency project and the Project HIRe. Additional data elements were identified which were collected by all three agencies including background information, family demographics and severity of injury. The Functional Assessment Inventory was available on clients at all three agencies and procured additional data at all three sites.

Joint training. In order to train staff in similar techniques for data collection, approaches to dealing with work and personal problems and intervention strategies, three training sessions were conducted. The first session involved a one-day meeting conducted by the Minnesota State Vocational Rehabilitation Agency on benefit/cost modeling. The second, involved two separate job coach training sessions sponsored by the Wisconsin State Vocational Rehabilitation Agency. The third component involved a two day program sponsored by the University of Wisconsin-Stout on "Community-based Employment for Persons with Traumatic Brain Injury." In the subsequent year, the Wisconsin State Vocational Rehabilitation Agency funded a state conference which has continued every year since that date and continues to be an active and viable part of consumer education in the state of Wisconsin in traumatic brain injury rehabilitation.

The Eau Claire training program. The Clinical Advisory Council directly participated in training on principals and practices essential to working with individuals with traumatic brain injury in community-based work programs. This two-day training program extended training to 38 individuals and provided important feedback to the project on how such knowledge could be applied. Several committee members contributed to the agenda. Dr. Hammeke, Dr. Malec, Dr. Thomas, Dr. Menz, and Mr. Wolcott presented content and information on assigned topics identified as critical issues by the entire committee.

Training at participating sites. The design of Project HIRe involved the implementation of community-based employment programs in three separate settings. The first involved the Clinical Services Institute of the University of Wisconsin-Stout; two other sites including rehabilitation facilities that were somewhat experienced in community-based employment, but lacked substantial experience in providing community-based employment services to people with traumatic brain injuries were also provided training. During the second year of Project HIRe,

the emphasis of the project focused upon refining the model with eventual replication at additional sites.

Identification of the Practices Included in the Model

The identification of suggested practices followed a content validation and empirical demonstration design process. The Clinical Advisory Council provided input and reaction to components of the model throughout a seven-step process which was conducted as follows:

1. The literature was reviewed to determine which practices appeared to show demonstrated effectiveness in the vocational rehabilitation of persons with traumatic brain injury.

2. Input from the Clinical Advisory Council was solicited to obtain their opinions based on their experiences and insights from the research literature.

3. The Clinical Advisory Council helped to determine which practices were most apt to be able to be demonstrated on a local basis. The following characteristics were defined as desirable components in a community-based employment model for traumatic brain injury survivors: (a) well defined criteria appropriate for use with potential applicants for the program; (b) a predetermined process for identifying long-term funding sources prior to implementing a community-based employment project; (c) inclusion of an intensive coordinated evaluation (medical, neuropsychological and vocational); (d) delineation of suggested practices defined in the literature; and (e) use of local advisory committees for establishing community-based employment sites, identifying long-term funding for individuals, and addressing waiting list issues.

4. Interactions with individuals presenting information on their respective programs at the Atlanta Think Tank, as well as the critical issues raised through that process as it applied to model development, demonstration, and replication were published. A review of suggested practices occurred during this meeting and provided information regarding appropriate activities to pursue during the course of the vocational rehabilitation of traumatic brain injury survivors.

5. Interactions and contacts were made through the Clearwater Beach Conference, with speakers and attendees regarding their experiences, what worked and which practices tended to be effective. The literature review and data available from other related projects were shared during the course of the National Conference and were incorporated into the program model as appropriate. The model that is described in this paper, therefore, represents a consolidation of the suggested practices obtained through this multi-step procedure.

6. Collaboration with other traumatic brain injury projects in Region V

continued throughout the project and provided feedback on the utility of the projects. This information was incorporated into the process of identifying and forming the domains of variables to be included in each of the research elements.

7. Field testing of the model and practices at three sites occurred as planned. The pilot site helped to identify and refine the primary model components. Replication at two other sites provided further verification as to the potential effectiveness of the suggested practices included in the model.

Development of a Neuropsychological Capacity

Neuropsychologists were available at the pilot site and both replication sites to provide necessary evaluations and consultation. Such availability of neuropsychologists tends to be the exception rather than the rule in rural communities. Adaptations to process and procedures and training of staff in the use of neuropsychological evaluations was felt to be a critical element in appropriate use of a neuropsychologist in the vocational rehabilitation process.

Dr. James Malec, Director of the Outpatient Brain Injury Program at Mayo Clinic, felt the need to instruct rehabilitation professionals in the use of neuropsychological evaluation reports and the use of a neuropsychologist as a consultant. Dr. Malec thereby wrote a chapter in the 1990 version of the traumatic brain injury book to cover this topic. Although this topic began as part of the Eau Claire, Wisconsin training program on traumatic brain injury, continued refinement of the paper led to subsequent presentations at the Clearwater Beach Conference and subsequently the chapter for the traumatic brain injury book. The interested readers are encouraged to consult Chapter IV of "Traumatic Brain Injury and Vocational Rehabilitation" (Corthell, Ed., 1990) entitled the "Neuropsychological Evaluation" by James Malec, Ph.D.

Availability and quality. Availability and quality of neuropsychological reports is limited in many rural settings. Often, neuropsychological reports are not available, or are dated and lack interpretive value for consumers and vocational rehabilitation personnel attempting to define a workable rehabilitation plan. The project's Clinical Advisory Committee recommended that a core battery of instruments to include in a neuropsychological evaluation of all persons being screened for entry into Project be developed. This core battery is shown in Table 1:

Consistency of information. A review of other potential measures to be considered in the project for determination of comparative usefulness was conducted next. Additional rating instruments were examined but not found useful for this project's needs, because other measures being used already provided similar types of data or presented the information in a format that was more useful. The measures which were investigated, but were not included in the core battery on a regular basis, included the Portland Adaptability Scale, the Good Samaritan Hospital Memory Checklist, the Work Personality Profile, Katz Adjustment Scale, the Disability Rating Scale and several reaction times tests.

Relevance in vocational planning. A need was also shown for a method of assimilating information on the functional impacts of neuropsychological, physical, and psycho-social affects of traumatic injury on achieving identified vocational goals. In addition to the primary means

Table 1. Project HIRe Neuropsychological Core Battery

Instrumentation	
*Sensory Perceptual Motor Examination	Grooved Pegboard
The 2 and 7 Selective Attention Test	Reitan Trail Making Test
Paced Auditory Serial Addition Test-Revised (PASAT-R)	Wisconsin Card Sorting Test
Benton Visual Retention	Minnesota Multiphasic Personality Inventory - 2
Rey Figural Test	Verbal Fluency Test
Wechsler Memory Scale - Revised Form	Category Test
Selective Reminding Test	Rey Auditory Verbal Learning Test with Recognition Memory
Token Test	Grip Strength (Dynamometer)
Boston Naming Test	Reitan-Indiana Aphasia Screening Test
Wechsler Adult Intelligence Scale - Revised	Benton Visual Retention Test
Finger Tapping	

*When possible, the entire Halstead-Reitan Test Battery was administered in addition to certain of the other tests depending upon diagnostic needs.

of assessing background information, functional skills and demographic data, additional measures were instituted to determine their effectiveness in community-based employment with this population. An instrument to achieve this end was designed and is being examined under another Center project. The Vocational Assessment Protocol, included in Appendix A, was designed for this purpose.

Development of Instruments for Case Management

A number of instruments were either developed or adapted for use in this project to complement the suggested practices and to help assure consistency in the model's delivery and in the assembling and posting data on clients, the training and the work environment, and the rehabilitation process. Copies of most instruments developed for the project are included in Appendix A. The processes or instruments developed or adapted for use included the following:

1. **Case Management File Recording Process**. A file and data management system for recording case notes and posting background information was developed using a six sided folder. This system was encouraged for use at all sites, and was found to be an economical and convenient way of storing information and for further reference.

2. **Family and Background Information Questionnaire (Thomas & Menz, 1988)**. This format was developed for the purpose of gathering background information, past employment, medical information and

special employment related needs.

3. **Neuropsychological Core Battery**. The Neuropsychological Core Battery as suggested by the Clinical Advisory Committee was used during the course of the project on the majority of all referrals for which a neuropsychological evaluation was performed. This battery included the measures presented on the previous table, but did not necessarily include the administrations of all listed tests.

4. **The Vocational Assessment Protocol (Thomas, 1988)**. The Vocational Evaluation Protocol, which was being developed under a related line of research at the Research and Training Center, was piloted in this project. This pilot testing included an assessment process outlined in publications by Thomas (1988, 1990 and 1991). The effectiveness of these approaches was based on clinical observations obtained during the execution the Project HIRe Model. This approach attempted to summarize neuropsychological, medical and psycho-social information.

5. **Vocational Adaptivity Scale (Thomas, 1988)**. This scale, originally developed by Thomas in 1983, was used to document employment related needs and critical vocational behaviors in the areas of job search knowledge and skills, interviewing and telephone use skills, supervisory relations and general work skills. This scale was designed specifically for working with people with cognitive intellectual and psychosocial work deficits and has been found to be an effective means of identifying work related problems on the job site.

6. **Functional Assessment Inventory (Crewe & Athelstan, 1981)**. The Functional Assessment Inventory is a 30 item behavior rating scale by Nancy Crewe and Gary Athelstan (1981). This rating scale examines 30 items found to be most indicative of problems for persons with physical disabilities. The areas covered include language, visual-spatial perception, speech and hearing, work habits, social adaptive factors, stability of condition and similar factors. In addition to the 30 items, 10 strength items are also identified, the purpose of which are to identify vocational assets to consider in the vocational planning process. The form of the Functional Assessment Inventory used was the version completed by the counselor on the client. An alternative form in which the client completes the survey on themself was also available but was not used. (Distributed by Materials Development, University of Wisconsin-Stout.)

Development of Instruments for Program Evaluation

Specific instruments designed for program evaluation purposes were based on input from sites, staff, and experiences from community-based employment models. Copies of these instruments are included in Appendix B. The following instruments were used to collect information necessary to document the model and assess the impact and value of the model on

consumer employment and integration:

1. **Daily Monitoring Form**. These forms were developed and used to document information regarding the types of intervention services needed, the opportunities for integration with nondisabled co-workers, weekly rates of earning, hours worked and other vital work related information.

2. **Supervisor Rating Form**. Supervisor rating forms, which were essentially an abbreviation of the Vocational Adaptivity Scale, were used on a periodic basis to obtain information regarding work habits, skills and abilities. These were completed on a quarterly basis by work supervisors, with an alternate form being completed by the family and another one by the work themselves.

3. **Client Rating Form**. This form requested the worker to reflect on any personal or work-related problems. It parallels the ratings provided by employer's ratings of job functioning and the family ratings for nonwork issues.

4. **Family Rating Form**. This included information from people served in regard to the family's perception of their needs and background information which is not often available in the file. This included family constellation and makeup, pre-existing injuries and disablement, and each person's respective perception of needed rehabilitation services.

Development of Site Implementation Manuals

During the course of the piloting of the HIRe Model, a manual for implementation of the project was devised, client files were arranged, and in-service training of the replication sites were completed. The materials included in that manual are contained in the body and appendices of this report. By the conclusion of the pilot testing with five persons in employment situations, adequate experience had been gained to identify the nature of the problems which would likely be encountered, and these experiences were brought to the replication site through a series of in-service training and meetings. When it was established that the Project HIRe approach to providing community-based employment services would be feasible, the final revisions to the model were made and documented in the introductory materials presented to the replication sites.

Development of the Community Advisory Committees

Community Advisory Committees were used to monitor the effectiveness of the model in providing services on a local basis at each of the implementation sites. Advisory committees were formed at each site. It was found to be a key to the success of model demonstration projects in previous Center research. Each Community Advisory Committee attempted to identify available funding streams, monitor progress in provision of services, and identify improved service delivery methods. This advisory committee was established based on capacities to network and serve as a means of insuring that demonstration project

accomplishments were met and that realistic goals and objectives for the project were obtained. The ideal committee should include representative from the public sector (including consumers), public agencies, professionals, and employers. See Table 2 in Chapter 4 for additional detail.

Staging The Model

The model was developed and originally piloted at the University of Wisconsin-Stout, Menomonie, Wisconsin. Due to the limitations of funding and difficulties securing long-term support services, the majority of all persons served in the pilot site were provided with transitional employment and support services. Follow-up was conducted by state Division of Vocational Rehabilitation counselors assigned to each respective case for periods of up to one and one-half years. Persons who were judged to require longer term services were not included in the project until long-term supports were identified. Once the model components and the data forms, processes, and procedures were revised, two sites were selected and used for replication.

Replication sites were located at vocational rehabilitation facilities with considerable experience in providing rehabilitation services to persons with disabilities. The first site implemented was Indianhead Enterprises, a rehabilitation facility in Menomonie, Wisconsin. The second site, The Ability Building Center, is located in Rochester, Minnesota.

At each of the sites, one person was selected as a primary contact. All staff who were to provide front line support services were trained in the Project HIRe approach to documenting information and providing community-based employment services to persons with traumatic brain injury. Both facilities had some experience in dealing with community-based employment. The Ability Building Center had considerable experience in providing services to persons with traumatic brain injury as well.

Chapter 3

ATLANTA THINK TANK AND THE CLEARWATER BEACH CONFERENCE

The National Think Tank on "Issues Relevant to Community-based Employment of Persons with Traumatic Brain Injury" was conducted to identify critical issues in the design and delivery of services. This was followed by a national conference on the same topic to further explore the contemporary models and practices. Both efforts were instrumental to the development of the HIRe Model. The two events were co-sponsored with the National Head Injury Foundation, and were guided by the Clinical Advisory Committee. Both conferences also involved collaboration with other key institutions. The advisory committee, NHIF, and collaborating agencies helped guide in the selection and screening of presenters and topics, and served as critical peer reviewers in all phases of the project.

A Participatory Action Model was used to develop all aspects of the two conferences. From the point of the development of the Think Tank agenda through the completion of the National Conference, this process of consumer involvement and peer review was used to avoid biased or unsubstantiated information from being presented at this critical point in the development of a new branch of an evolving discipline. This process thereby followed the research initiative as outlined in the original project grant proposal. Because of the complexities involved in this process and response of the field, the staff of Project HIRe spearheaded the Think Tank process, but the subsequent National Conference and publication of the resulting text were assumed under another related project also under the supervision of the principal investigator of Project HIRe. Brain trauma survivors, advocacy organizations (NHIF and state affiliates) purchasers and providers of services as well as employers were involved in all aspects of planning, peer review of paper proposals and execution of both events.

The Clinical Advisory Committee's Expanded Role

Project HIRe's Advisory Committee's role was expanded from that originally described in the initial application to include the peer review of papers for identification of issues and suggested best practices, selection of processes and procedures for developing the program model, and for selection of participants for the National Think Tank and National Conference (see Project Reports 1 and 2 for full details). The eight person committee (identified in Chapter 2) included representatives with considerable training and experience in research methodology, clinical and rehabilitation psychology and client advocacy. These individuals are identified below and remained active throughout the project.

Survivor and Advocate Participation

The National Head Injury Foundation, which represented survivors of traumatic brain injury and significant others, were actively solicited and involved throughout the project. The NHIF cosponsored the Think Tank and national conference, and was active through the Clinical Advisory Committee. In addition, several members of the National Head Injury Foundation

Executive Committee and Survivor's Council were also included in this process. Funding for survivors to attend the Conference and Think Tank were also provided through the resources of this grant. This important liaison helped the project to be sensitive to the perceptions of not only persons in professional roles but also those of persons in consumer roles and those who themselves had survived traumatic brain injury.

Topics for Identifying Critical Issues

In initial planning, the committee agreed that the state of the art was ill defined in this emerging discipline and that consensus was needed on which issues to address in the upcoming national forums. Three areas were identified and the advisory committee solicited the participation of individuals in the profession and from advocacy groups which were known to be actively involved in research, service delivery or problem solving. The following three discussion topics were identified for the Think Tank and subsequent National Conference:

1. Translation of medical, neuropsychological, and functional capacities information into employment planning strategies.

2. Identification of models and approaches to community-based employment of persons with traumatic brain injury.

3. Development of public policy and needs relevant to funding programs, research, and training.

The Atlanta Think Tank

The Think Tank process. A one-day Think Tank was held prior to the NHIF Annual Conference in Atlanta on November 16, 1988. The Think Tank was designed to stimulate creative thinking and problem solving in a open and unrestricted atmosphere. Activities were planned to promote divergent and innovative approaches to the identification of issues and problems facing the traumatic brain injury survivor entering community-based employment situations in this one-day Think Tank. A combination of panel presentations, open discussion, and small group consensus activities were used to identify critical issues in the three topical areas. Panel presentations and discussions in the morning broadly explored the issues, while the three small groups held in the afternoon sought a fuller array of important issues and sought consensus on which of these important issues were most critical. Peter Griswold, state director of the Michigan Rehabilitation agency, moderated the Think Tank and kept panels and participants on task and on time. Each presenter defined the key issues in their respective topic area, presented an overview of what was known, discussed what needed to be done to attack the issue, and attempted to be controversial in order to stimulate the group discussion and interactions.

The 15 panelists were asked to present a position paper which explored, expanded, and incited discussion. The remaining 36 individuals were also invited to participate because of their active involvement in research, training, advocacy, public policy, programming, and employment. This group was comprised of consumers and both the public and private sector representatives. Following each panel the full Think Tank contingency was asked to react and

comment. The entire group was then assigned to one of the three topic groups on the basis of their primary interests. These groups explored the issues and problems identified in the panel presentations and compiled a list of priority issues. A variation of a delphi type of technique was used to gain consensus among group members regarding salient issues and prioritization of these issues. A large group session concluded the Think Tank process with each group presenting and defending the issues it identified.

The Clearwater Beach Conference

The goals for this conference were to identify practices and research on (a) models applicable to community-based employment of severely affected individuals with traumatic brain injury; (b) appropriate neuropsychological, medical, and vocational assessment practices; and (c) solutions to critical public policy issues. The goal of this training conference in relation to Project HIRe was, therefore, to set the stage for the design of a model delivery of services in predominantly rural areas.

Following the completion of the Think Tank, the steering committee was convened to review comments and identify a process for follow-up actions. First, the committee was asked to identify whether or not it was apparent that a National Conference to further explore these issues appeared warranted in light of the comments and feedback provided by the full Think Tank contingency. It was unanimously decided that there was a general lack of agreement among the field regarding the current practices which should be followed in community based employment programs for persons with traumatic brain injury, and that a National Conference would be a valuable means of providing a forum and method of documenting current methods for providing such services.

Only projects with empirical data which showed effectiveness of demonstration programs or client descriptors and outcome data would be included. The committee was very concerned that the Think Tank and conference would not promote ideas that were unsound or untested, therefore a strict scientific process of peer review of papers was initiated, with strict compliance to the principal that primary consideration would be given to individuals who can provide data on the effectiveness of outcomes and process procedures with this group.

A limited number of persons who appeared to have the best knowledge and database of information in this area were identified for invited speakers. A general call for papers was also sent to the mailing list of the Research and Training Center and to the mailing list of the National Head Injury Foundation. This elicited 49 responses from which the 30 papers were selected for presentation. In total, approximately half of all persons attending the Conference also presented a paper or poster session or were involved as a discussant. Of the remainder, the majority also contributed to the Conference by engaging in round table discussions or contributed to the process by comments from the floor.

The Conference format was planned such that one person would present a primary paper while two additional persons were asked to provide either a critical analysis or alternative viewpoints of models and approaches, an overview of other outcome studies or guidelines for suggested practices. The audience was urged to actively participate at the conclusion of the presentations.

Written comments and input were provided back to primary authors, along with suggestions for revision. This feedback prompted the presenters to significantly alter their papers for inclusion in the book produced from the Conference. The resulting book was no longer a proceedings of the Conference but rather a fully edited and refereed text which was peer reviewed by the steering committee.

The conclusions of the Think Tank were represented in a publication by Thomas and Menz which appeared in the American Rehabilitation magazine (1990) and a chapter prepared by Menz and Thomas (1990) which appeared in text produced by the Research and Training Center (Corthell, 1990). The following is a review of the key points discussed in these publications.

Priority Issues in Development of Community-Based Employment

The analyses of the issues identified in the 1989 Atlanta Think Tank and the National Conference were essential to the development of the Project HIRe Model. The following is an overview of the issues of key interest to this project, with a brief explanation of potential impact of each variable:

1. **Vocationally relevant reports**. Evaluative reports from all rehabilitation professionals need to be presented in vocationally relevant terms, especially those prepared by the clinical neuropsychologist. Too frequently reports are not understandable by grass roots program planners, job coaches, and employment specialists.

2. **Ecological validity of neuropsychological measures**. The validity of neuropsychological assessment indices as they predict specific skill components need to be investigated. This may require a critical review of the content relevance of neuropsychological tests to specific jobs targeted as a primary goal of individuals.

3. **Productivity measurement**. Improved definitions of employment productivity need to be developed, especially in relation to current abilities, past abilities, and potential (i.e., their potential for future work and employment mobility). Criteria of success for rehabilitation programs should consider these three sources of productivity.

4. **Meaningful outcome criteria**. Appropriate outcome criteria needs to be defined in order to establish reasonable integration goals for persons with a head injury. These criteria must consider both what constitutes meaningful work activity and what type of work would be a reasonable goal to pursue. Independent competitive employment is not a reasonable goal for all brain injured persons.

5. **Measuring quality of placement**. Measures for assessing the quality of a placement in terms of degree of community integration, job satisfaction and opportunity for interacting with nondisabled peers needs to be

developed. These should relate to quality of life obtained by persons placed into community-based jobs, as well as to traditional job benefits.

6. **Direct access to rehabilitation services**. Mechanisms which support long-term follow-up need to be defined and models which include alternative approaches to a central referral point for planning and funding of individual cases need to be devised, studied, and demonstrated. Rehabilitation planning with many survivors is complicated by problems associated with the identification of long-term funding sources necessary to finance on-the-job and off-the-job supports.

7. **Moderator variables**. The impact of moderator variables on social, academic and vocational outcomes needs to be investigated. Certain factors such as drug abuse, family support, and pre-injury characteristics significantly affect quality of outcomes.

8. **Syndrome-based strategies**. Research is needed which identifies possible syndromes following brain injury and how effectively persons with those syndromes respond to clinical and community-based treatment approaches or models.

9. **Team interaction models**. Models of team interaction need to be demonstrated which define how the head injured person, rehabilitation personnel, family members and employers can work together to foster and sustain community-based employment.

10. **Necessary support systems**. Support systems to maintain persons with head injuries in the community and on a job need to be studied, in order to estimate rehabilitation service needs, duration of support needs, and costs associated with these programs and services.

11. **Compensatory aids**. Investigations are needed to examine and report on the functional utility of compensatory aids that will foster community-based employment opportunities. Funding of research and development of orthotic devices and compensatory strategies for specific needs of head injured persons could promote a more rapid improvement and application of technology to job and community integration.

12. **Disincentives to community-based rehabilitation**. Factors that serve as disincentives to vocational rehabilitation programs need to be defined and studied in order to develop solutions to them. Disincentives may include impending litigation, potential loss of benefits, individual's fear of failure, reluctance to try something new, and unwillingness to accept a job that is less than what they believe they have potential for, may serve to keep people from working.

13. **Patterns of necessary employment supports**. Typical patterns of

employment supports (types, frequency, and amount) needed to maintain employment under different community-based models need to be determined before we will be able to obtain comparable data across employment options.

14. **Preplacement skills and prerequisites**. Investigations into which skills are necessary prerequisites before vocational placement is attempted are needed. Controversy abounds as to whether certain skills should be taught in the environment in which they will be used or whether preplacement training can be effective.

15. **Training for practitioners**. Training for all levels of service providers and family members is an essential requisite of future success. Both preservice and in-service training for professionals in disciplines relevant to vocational rehabilitation is desperately needed. Job coaches, rehabilitation case managers, counselors, and employment training specialists are rarely adequately skilled or knowledgeable about needs and approaches with brain injured individuals (Thomas & Menz, 1990).

Unresolved Issues in Public Policy

Menz and Thomas (1990) provided a detailed policy analysis of the complete array of issues identified in the Think Tank verified during the National Conference. That chapter considers the issues, without regard to priority, in terms of their interrelationships in an effort to portray a complete picture of the unresolved issues that may need to be incorporated in a fully conceived national policy for the rehabilitation of persons with traumatic brain injury. Six sets of largely unresolved issues were identified. The following briefly identify how issues were grouped. The reader should consult Menz and Thomas (1990) in Corthell (1990) for further detail.

1. **Issues related to the intent of public policy**. The purpose for specialized public policy, specific needs to be addressed, suggested focus of policy on coordination, services, research, and development are important considerations.

2. **Public education and advocacy issues**. Public awareness and education, and advocacy in achieving public policy are considered essential to eventual change.

3. **Program authority, responsibility, and capacity issues**. Federal level responsibilities, state level responsibilities, community level responsibilities, and questions of capacity are among critical determinants.

4. **Systemic issues**. Long-term funding, definitions and disability codes, mechanisms for continuing access, disincentives to rehabilitation and equity in allocation of finite resources need to be examined in relation to long range planning.

5. **Community-based model development issues**. Goals, outcomes, and criteria; theoretical basis and design of generalizable models; types of jobs in community-based employment; and, relevant assessment and vocational planning are central considerations.

6. **Capacity building priorities**. Specific research and evaluation issues, program development issues, program resource issues, and personnel and training issues are Rey points within this category (Menz & Thomas, 1990 in Corthell, 1990).

Training Materials Resulting From Project HIRe

As a result of the efforts of this project, audiotapes and videotapes of the National Conference were made available to the NARIC as suggested by the National Institute on Disability and Rehabilitation Research. Several articles were also produced, and the text on "Community-based Employment Following Traumatic Brain Injury" is now completed as well. The following are titles of the products resulting in whole or in part from Project HIRe:

Corthell, D. W. (Ed.). (1990). Traumatic brain injury and vocational rehabilitation. Menomonie: University of Wisconsin-Stout, Research and Training Center.

Johnson, W. (1991). Traumatic brain injury and community-based employment (videotape series). Taken from the Traumatic Brain Injury and Community-Based Employment Conference held in Clearwater Beach, Florida on February 27-28, 1989.

Menz, F. E., & Thomas, D. F. (1991, October). Co-chairs of National Conference on Community-based employment of persons with traumatic brain injury: Theory and practice. Conference held on October 23-26 in Philadelphia, PA.

Menz, F. E., & Thomas, D. F. (1990). Unresolved issues in the rehabilitation and community-based employment of persons with traumatic brain injury. In D. W. Corthell (Ed.), Traumatic brain injury and vocational rehabilitation (pp. 225-247). Menomonie: University of Wisconsin-Stout, Research and Training Center.

Smigielski, J. S., & Nelson, A. L. (1990). Problems needing solutions: A consumer and family perspective. In D. W. Corthell (Ed.), Traumatic brain injury and vocational rehabilitation (pp. 67-78). Menomonie: University of Wisconsin-Stout, Research and Training Center.

Thomas, D. F. (1990). Vocational evaluation of persons with traumatic head injury. In D. W. Corthell (Ed.), Traumatic brain injury and vocational rehabilitation (pp. 111-139). Menomonie: University of Wisconsin-Stout, Research and Training Center.

Thomas, D. F. (1989). Vocational evaluation of persons with traumatic brain injuries. Vocational Evaluation and Work Adjustment Bulletin, 22(2), 57-64.

Thomas, D. F., Hammeke, T., Malec, J., & Wolcott, G. (1987, July). Developing community-based employment programs for traumatic brain injury survivors. Presentation made to the participating staff and affiliates of the three regional supported employment and traumatic brain injury grants, Midway Motor Lodge, Eau Claire, Wisconsin.

Thomas, D. F., & Menz, F. E. (1990, Summer). Conclusions of a National Think Tank on issues relevant to community-based employment for survivors of traumatic brain injury. American Rehabilitation, 16(2), 20-24.

Thomas, D. F., Menz, F. E., & McAlees, D. C. (In press). Community-based employment following traumatic brain injury. Menomonie: University of Wisconsin-Stout, Research and Training Center.

Chapter 4

THE HIRe MODEL

The HIRe Model of community-based employment was designed to predominantly accommodate needs in rural areas, where extensive resources are limited, and staff availability precludes the development of complex service arrangements and central service locations in larger cities. The Model suggests using a team approach to identify available community resources, profile background neuropsychological, medical and background information in functional terms understandable to lay workers who have had specific training in the needs and treatment provision for persons with a traumatic brain injury. Once initial assessment and training has been completed, a less intense model of service delivery will often be necessary. This model uses a prescriptive vocational evaluation and the involvement of an employment training specialist with background in both vocational evaluation, job placement and traumatic brain injury rehabilitation. This employment training specialist serves as a primary liaison between all other parties, and is responsible for a small caseload involved in evaluation and initial community-based employment. This person later relinquishes the responsibilities of ongoing services to a long-term (maintenance) job coach who has had less specific training in traumatic brain injury. The maintenance job coach assumes the long-term and ongoing support needed for that person, with consultation of the treatment team if problems arise.

Subsequent services are available through the employment training specialist and a zero reject concept for re-entering the person back into the service end of this employment training program is encouraged. In this manner, one employment training specialist is able to work with eight to ten persons at various stages of intake, job site evaluation and initial transitional employment training. Eventual fading of the job coach to a less intensive and more of a maintenance role is typically realized as work related problems are identified and worked through.

This Model requires the use of ongoing community resources to fund the job coach and long-term community-based employment requirements, and case manager responsible for attending to nonwork related issues. If nonwork problems are minimal, a rehabilitation counselor or case manager in a rehabilitation facility may serve this role. For cases with more intense community integration needs, clinic based case management organizations may need to be used to deal with off-the-job support and interaction services.

WHO THE MODEL IS INTENDED TO WORK WITH

The Model is intended to be tailored to fit the severity of the disability and the employment support needs necessary to maintain the person on the job, and the availability of services. The following discussion will give examples of how this model can be tailored to fit various levels of severity.

Persons With Mild Functional Limitations

The person who has sustained a mild to moderate head injury and demonstrates mild residual impairments and cognitive psychosocial and physical variables are often the most appropriate persons to serve in a transitional type of employment support program. Persons served in Project HIRe within this category were provided neuropsychological consultation or evaluation, family counseling and at times on-the-job or off-the-job supports depending on needs. In some cases, people referred to the project had sustained a head injury and were returning to a former job.

Oftentimes, other physical problems not directly related to the head injury were also noted, such as back injuries, injuries to limbs, etc. In such cases, a work hardening program or a gradual return program with volunteer experiences were appropriate. As physical injuries continue to heal and as the person continued to gain strength and stamina, they may be able to return to work with limited supports. In some cases, a vocational evaluator or one skilled in applied behavioral analysis is used to go to the job site to determine the demands of the job, the behavioral characteristics necessary for success, and any restructuring of the job or the job site which may be necessary before the return. In some cases, this may be all that is necessary to return a person to employment, along with ongoing support services to discuss return to work difficulties. Although this does not represent a true supported employment model in the strictest sense, the innovations necessary to rehabilitate any individual case should be encouraged whenever possible.

Persons With Moderate Residual Impairments

People within this category will often have more notable difficulties insofar as speech and language problems, difficulties with balance, cognitive related difficulties and perhaps psychosocial or psychiatric related problems. Persons within this category of services may need more than simply a time limited transitional employment and may require rather extended periods of supported employment before they are competitively employed. Some cases in the moderate range of residual impairments may require indefinite support services or life long follow-along. Depending on the nature of the deficits, rather than the severity of the initial injury, employment programs will need to be tailored for each individual.

Persons With Severe Residual Impairments

Person within this category may require initial support services, as well as long-term community support both off-the-job and on-the-job. One notable exception occurred in Project HIRe, in which a person with severe physical limitations, behavioral problems and extensive cognitive and language difficulties was able to be placed on a competitive work site without supports but required off-the-job supports in terms of transportation and independent living services. In most cases, however, persons with severe residual limitations will require extended support services if placed on community employment work-sites. The important element is that support is available when it is needed to work through crisis situations or problems that arise.

CRITICAL ELEMENTS OF THE HIRe MODEL

Staffing for the Model

The HIRe Model uses two different levels of job coach involvement. The first involves an employment training specialist with extensive background and training in traumatic brain injury rehabilitation and the second uses a more traditional job coach who has primary skills in the nature of the work being performed.

Employment Training Specialist as Job Coach. This person should be one who has had extensive training in the nature of traumatic brain injury and understands the patterns of limitations and deficits common to persons following a traumatic brain injury. This person may or may not have advanced training or a college degree. Critical factors in this role are the person's ability to work with people, to demonstrate a desire and interest for working with persons with traumatic brain injury, and a capacity to work with a treatment team. The employment training specialists used in Project HIRe had a bachelor's or master's degree, however, a relatively high turnover rate was experienced because they obtained other types of employment after a relatively brief experience with this population. The employment training specialist functions as an interim case manager and works with the rehabilitation team from intake through the placement and follow-along stage, which is typically provided primarily by the long-term job coach. The employment training specialists in Project HIRe were charged with intake, gathering family background and conducting an interview with the head injured person in addition to the aforementioned support services.

Both the job coach and the employment training specialist were involved in the vocational evaluation to some degree. The employment training specialist encumbered a greater role in assisting the evaluator in tasks which were time demanding or which required specialized attention. The long-term job coach, wherever possible, was introduced to the client referred to the program at the intake interview, and became familiar with this referral from the onset.

The employment training specialist typically introduced the long-term job coach to the process during on-the-job assessments. In longer term job trials, the employment training specialist would begin to fade their time and to transfer the person to the long term job coach as the more technical aspects of job training were sorted out. Often, persons were placed on a transitional worksite in which they continued to learn job skills and develop work habits, with reduction in time from both the long-term job coach and the employment training specialist. If their first employment following the job trial was on a long-term job site, the employment training specialist would eventually fade involvement to the point where occasional follow-ups were needed. When the person was faded to job maintenance, the employment training specialist would be available only as problems arose.

Maintenance Long-Term Job Coach. The long-term job coach in the Project HIRe Model typically worked with a wide range of other persons with other disabilities in addition to traumatic brain injury. Typically, several long-term job coaches were available for providing job site services to the head injury referral, on the basis of the nature of the work, the location and the availability of time of the job coach. The amount of time necessary for support was individually decided upon, and no set minimum hours of weekly or monthly contact were

assumed to be necessary.

Typically the long-term job coach was a person who was generally more skilled in industry and had more extensive work in the labor market, and usually had less in the way of formal education than the employment training specialist. The primary concern of the long-term job coach was to see that the job got done, to train the person on the technical aspects of the job, and to assist with work production activities at the onset if the person was not fast enough. Whereas each site typically had one employment training specialist for training, most sites had several job coaches to whom they may transfer the case if longer term support services were necessary.

Staff Development and Preparation

Training for all levels of service providers was found to be an essential requisite to program success. Education and training programs should be a primary consideration when developing employment programs. This includes both preservice and in-service training for professionais in disciplines relevant to vocational rehabilitation (i.e., medical, psychological, vocational, educational). Programs where job coaches, rehabilitation case managers, counselors, and employment training specialists can acquire basic skills necessary to competently perform their jobs are essential elements to consider in the development of a rehabilitation team. Similar programs are also valuable for parents and advocates, and for employers. Such training requires both preservice and in-service training.

Community Advisory Committee

The Community Advisory Committee is an important element at the onset of implementing a model to serve persons with traumatic brain injury in community sites. This committee can be used to examine available funding streams, monitor progress in provisions of services, and help identify alternate service delivery methods. This advisory committee is constructed based on the capacities of key people to network and serve as a means of insuring that models evolving pursue and accomplish realistic goals and objectives. Its functions should be to examine the process of referrals, to identify ways to resolve individual funding problems, to establish networks for employment and other community supports, and to monitor the process of program. The ideal committee includes representative from the public sector (including consumers), public agencies, professional, and employment as suggested on Table 2.

Eligibility and Selection Criteria

In order to be included in a community-based employment program, individuals were selected on the basis of criteria by recommendation of the Clinical Advisory Committee. Referrals needed to demonstrate willingness to work, be a survivor of a traumatic brain injury, and be incapable of working in an independent competitive employment situation due to the severity of disability. The selection criteria used in HIRe were as follows:

1. Eighteen years of age or older and no longer actively involved in a high school education program.

Table 2. Composition of a Community Advisory Committee

Perspectives and Representatives	
Providers and Funding Agencies	**Public**
County developmental disability	Consumer(s)
County mental health	Advocate(s)
Vocational rehabilitation program	
Rehabilitation facilities	**Employment**
Professionals	Community employers
	Labor or union concerns
Psychiatrist	Job services
Neuropsychologist	Private industry councils
Neurologist	
Rehabilitation	
Placement and employment	

2. Verification of eligibility for vocational rehabilitation services through the state vocational rehabilitation agency.

3. Reasonable likelihood of functioning in supported employment given the resources of job coaches and present family involvement.

4. Must be at least one year postinjury and not in a medically unstable or rapidly changing state.

5. Seizures, if present, are under control. It is not necessary to be seizure free as long as there is adequate control (i.e., medication) of seizures.

6. Responsible for their own eating and toileting or have a person available to assist as necessary.

7. Able to state that they are willing to become involved in a program and to meet all program requirements.

8. Have an established long-term funding source for providing ongoing supported employment services if supported employment will necessary and will extend beyond the period of time covered by an initial funding agency (e.g., vocational rehabilitation).

9. Able to identify any specific job delimiters which they are unwilling to accept in a job. Such job delimiters may include a minimum acceptable wage, a maximum distance that they are willing to travel, and specific working conditions that are intolerable.

10. Recent physical examination which stipulates the person's ability to work a minimum 20 hours per week must be on file.

Adaptation of the Model to Local Conditions

The Project HIRe Model, which appears in Figure 1, shows how people enter and move services. All phases of the approach need not be conducted with each referral. It is up to the rehabilitation team to determine the logical steps in the sequence of activities, depending upon the individual needs of each referral.

For example, a person who is brought in through the intake assessment and neuropsychological process may be judged not ready to undertake a vocational evaluation because of severe depression or psychiatric disturbances. In such a case, referral to an outside source to provide these services may be done and the program may be temporarily interrupted. In other cases, when it is apparent that neuropsychological and vocational evaluations have been completed or are not felt to be necessary on the basis of recent treatment or clinical findings, a person may proceed directly to a job trial and perhaps to transitional supported or even competitive employment. The design and flow of the model is intended to provide an overall blueprint of the types of services that must be necessary and typically will be arranged for each referral. Under most conditions, all steps within the model will be followed unless circumstances are such that the entire process does not appear to be necessary.

As this model is being examined for incorporation into various community-based sites, it must also be understood that availability of staff and job assignments may demonstrate a wide variability between locations and some flexibility in this regard is necessary. The key element in the entire process, however, is that an employment training specialist who has a solid knowledge of brain behavior relationships and traumatic brain injury and who can be trained in the basics of vocational rehabilitation, vocational evaluation and job placement be available for a program on a full time basis. Persons with split assignments typically get drawn away from the demands associated with the employment training specialist position, therefore a full time person in this capacity is deemed essential. The second inherent quality of this model is that a thorough assessment and review of background information is done prior to initiating any type of vocational related services. Failure to have a full time employment training specialist and failure to follow the thorough preservice assessment and case review violates the spirit and intent with which this model was developed.

In order to better understand the various community integration specialist who may be involved in this process, the following is a breakdown of titles that are used in discussions throughout this document:

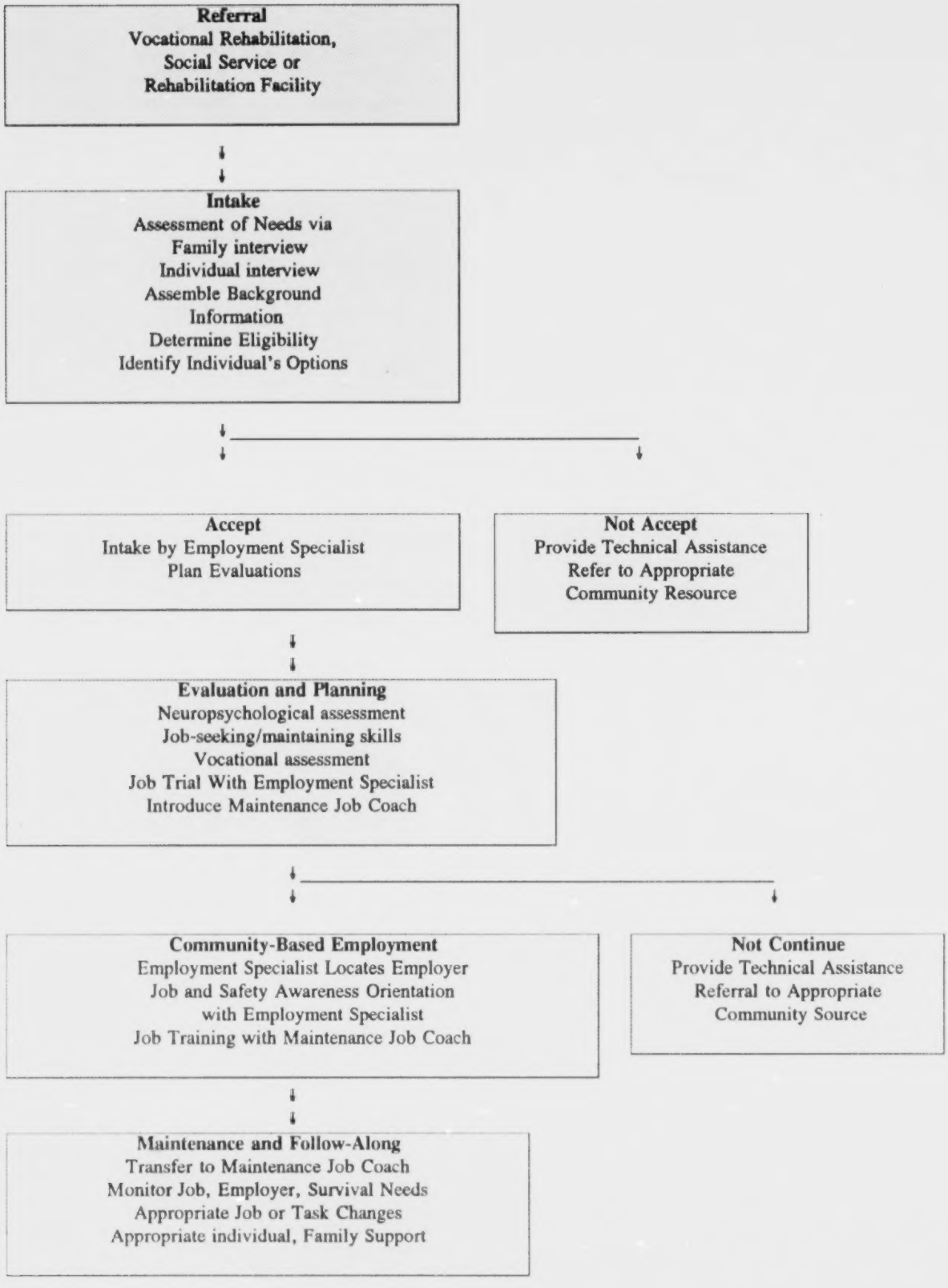

Figure 1. Example of Alternate Program Paths

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1. **Employment training specialist**. The person that fills this position will typically have a bachelor or preferably a master's degree in professional discipline such as vocational rehabilitation, applied psychology, occupational therapy or a related field. The essential prerequisite is a solid understanding of brain behavior relationships, and of physical and vocational rehabilitation programs for persons with traumatic brain injury. Good working knowledge of neurobehavioral rehabilitation models and approaches is also important. This person will serve as the main contact with all client services aspect of the case involved in an employment program. If a community appears to have too few referrals to warrant the employment training specialist position, it may be best to have several communities, a county or several counties or districts cooperate to co-fund such a position to be shared among various locales.

2. **Job coach (long-term)**. This person will be responsible for the day to day supervision and monitoring of persons after they have been placed on a job. Persons in this position typically will have had some industrial or employment related experience but not necessarily a college degree. The most important characteristic of a job coach is a person who sincerely wants to perform that type of job and has an earnest interest in working with persons with disabilities.

3. **Work trainer**. The work trainer typically refers to an individual with substantial background, knowledge and experience in the job for which the client is being considered. Entry level jobs such as floor sweeper, small parts assembler, etc. may not require a person who has had specific training in this area and may be able to be learned by the job coach and passed on to the client. A person who is going into a job such as a welder, automobile mechanic or automobile mechanic's assistant or similar such technical occupations may require a person who knows the job very well in order to assess skills and abilities and teach the specific skills on the job.

4. **Lead worker**. This person may be used when a work trainer is not necessary, but a person who already knows the job can oversee various aspects of day to day work functions. For example, a lead worker may be a former client who has been thoroughly trained in job demands and demonstrates capability of overseeing the work of others, or may be a regular employee of a company who has the added responsibility of checking the supported employment worker's production or work quality. This person is not identified with the intent of replacing a job coach, but serves as an on-the-job mentor and overseer of daily operations.

5. **Community support worker**. This person typically has a bachelor or master's degree in a human services area, and typically has a caseload of persons with various disabilities whom they oversee for both independent living and work related matters. This type of professional may be funded through local funding options and is likely to have a chief responsibility for community support services rather than work. Community support services may include mental health services, AODA related issues and crisis intervention services necessary.

6. **Case manager**. This person is typically a degreed professional who assumes the responsibility of overseeing all aspects of community integration for a disabled worker. This person may be a rehabilitation counselor, work adjustment specialist, rehabilitation nurse or may serve in a similar type of position. This person's chief responsibility involves working with the client and family, coordinating aspects essential to community integration from both the independent living and employment related aspects and determination of rehabilitation needs and potential funding sources.

Other vocational rehabilitation professionals are likely to become involved in the program as well, and may in fact function in one of the above mentioned capacities as a type of community integration specialist. These people include the vocational evaluator, vocational rehabilitation counselor, and employment specialist, sometimes known as a job placement and follow along person or a employment development specialist. In facilities in rural areas or small towns, it is not unusual for one person to serve in two or more of these capacities, depending on the number of clients served in the immediate service program and availability of other professionals.

Desirable Features of a Neuropsychological Evaluation and Vocational Assessment

Several factors were found to be desirable in a community-based assessment model which were not necessarily applicable to the provision of supported employment services to other disability groups. Two such factors included the completion of a comprehensive neuropsychological consultation or evaluation and vocational assessment.

1. The neuropsychological evaluation was primarily aimed at observing optimal learning styles, safety awareness, and potential hazards such as visual field deficits, motor and coordination problems, and difficulties in sensations for hot and cold, etc., in addition to the assessment of cognitive and neuropsychological behavioral functions. Neuropsychological data was essential to good planning of vocational assessment tasks. For instance, persons who were found to demonstrate better capacity for learning material presented verbally, as opposed to visually, were assessed primarily using a verbal rather than visual methods. Individuals who demonstrated left side neglect had work stations designed so that the majority of the materials were shifted to the right of the body line, with special attention being paid to objects that may cause serious danger if overlooked. In some cases, special glasses may be used to compensate for visual field deficits.

2. Vocational assessment was also deemed as a critical means of determining patterns of assets and functional limitations prior to placing persons on work sites. This included analysis of behaviors in work situations as well as assessment of activities typically associated with executive functions such as searching for a job, processing supervisory feedback, modifying behavior on the basis of task performance and demonstrating self-regulatory behaviors.

Approaches were found to be useful to consider in the assessment process. These approaches are grouped into the six categories of assessment methods listed below:

1. **Formalized testing**. Formalized testing included neuropsychological testing and specific vocational testing completed as part of the evaluation. Specific vocational tests of achievement or aptitude, vocational interests, and capabilities that are able to be examined through standardized test procedures.

2. **Traits and abilities testing**. Traits and abilities testing included dexterity tests, and work samples which examined a unitary factor or trait such as fine motor skills, gross motor coordination or fine assembly skills.

3. **Safety evaluation**. This included an assessment of one's safety awareness especially involving machinery or moving objects. When a person was being asked to do machine tending or machine operation and there was a suspicion that cognitive or attention difficulties may interfere with safe operation of the machine, a safety evaluation was conducted prior to actual placement on the job.

4. **Behavioral assessment**. Behavioral assessment was often done during the course of the evaluation and continued during the course of a community-based assessment or job trial. This included an assessment of interactions with other workers, and documentation of behaviors which would tend to interfere with social adaptation or on-the-job functioning.

5. **Environment analysis**. This included an assessment of the environment in which the person would be placed. The environment was assessed both prior to placement on the job and after the person was placed on the job. A job analysis and a content task analysis of specific duties as well as evaluation of co-workers and the immediate environment in which the person would be working were essential elements considered in the environmental analysis.

6. **Functional assessment**. This included an assessment of a person's ability to get along socially in the neighborhood, to use public transportation, to interact socially with others and to be able to perform the functional skills necessary for job survival. This often included an assessment of a person's ability to open doors of access and egress, accessing toilet facilities and obtaining food and medical help if that was necessary while at work.

THE MODEL DESCRIBED

The HIRe Model of community-based employment used in this program provided community-based employment for persons with traumatic brain injury using a three stage approach: (a) assessment and planning, (b) community-based employment and training and, (c) maintenance. The Model is illustrated on Table 3.

Services were initially provided by an employment training specialist. It was possible for one employment training specialist to work with six to eight persons in various phases of program involvement. These phases consisted of intake, job site evaluation, initial transitional employment training and eventual fading of time with involvement by the maintenance job

coach.

Assessment and Planning Stage (Steps 1-3)

Evaluation planning starts once the employment training specialist receives a referral. A referral is initiated using a project referral form, which is followed by a brief interview with the person, the family and significant others. A sketch of background information and current vocational needs are established by the conclusion of this interview. The intake criteria identified on Table 3 are strictly adhered to.

Releases of information must be signed as soon as possible. Obtaining background medical and other records can be a costly and time consuming operation, therefore, an expense account for obtaining records is advised. Time needed to obtain the information may require a trip to a hospital, time and expense to make telephone calls, and costs for copying records. No further evaluation or services should be provided until all requested background information is obtained and an application for other subsequent services is completed. This will eliminate the possibility of repeating diagnostics which have already been completed, as was often the case during the early stages of this project.

When all background information is received, the referred person and the family are invited to an intake interview, at which time all background information is reviewed for accuracy and completeness.

The Project HIRe Model is based on the premise that traumatic brain injury rehabilitation should include a comprehensive pre-employment neuropsychological and a prescriptive vocational assessment with planning recommendations for dealing with work related problems prior to involvement in community-based employment. Once an evaluation of work skills has been completed, professionals with experience and training in brain injury rehabilitation provided transitional support services in community-based worksites. Later, after the initial period of adjustment to the worksite which includes training in specific work duties, the primary responsibility for management of the case is transferred to a maintenance job coach for long-term support.

The type of vocational assessment necessary to assess a person relative to placement into a community-based employment situation will necessarily need to be determined by the evaluator. In some cases, a return to a former level of employment is warranted, which may require a visit to the worksite for an environmental and job analysis, and a brief evaluation in a controlled situation to determine if the necessary skills, aptitudes and behaviors that the person exhibited before the head injury are still adequate for managing a return to work. In other cases, the vocational assessment may require a limited assessment in a controlled situation such as a vocational evaluation laboratory to determine (a) safety awareness, (b) ability to follow directions and instructions, (c) compensatory strategies which are needed or have been developed, and (d) alternatives and methods for interacting with people. A situational assessment in a targeted job area, if one has been identified, or a more extended job trial may be appropriate for determining compatibility with the job match.

Table 3. Outline of HIRe Model

Stages and Steps	Activities
Assessment and Planning	
1. Intake	A. Screen against established eligibility criteria. B. Identify sources for referral, services, and potential long-term funding. C. Develop initial assessment plan. D. Review purposes of program and alternatives with consumer and significant others. E. Obtain working commitment from consumer and significant others. F. Identify and examine alternative job goals in order to identify appropriate assessment sites.
2. Neuropsychological Evaluation and Consultancy	A. Identify work skills and functional limitations to optimal work performance. B. Arrange neuropsychological evaluation if one has not been completed, or arrange neuropsychological consultation. C. Following neuropsychological evaluation determine whether additional evaluations are required. D. Identify preserved skills to be built upon in work and other appropriate settings. E. Re-examine functional limitations. F. Identify deficits or limitations that are likely to be problematic to achieving targeted job goals. G. Identify alternative compensatory strategies that should be explored during vocational evaluation and planning. H. Summarize and share information regarding existing skills, in relation to deficits, and devise potential adaptive strategies in a pragmatic and descriptive manner with consumer and significant others.
3. Vocational Assessment	A. Establish tentative assessment plan, including community-based situational assessment and roles for employment specialist and job coach. B. Implement assessment plan and address specific referral questions regarding functioning at supported or transitional employment sites. C. Explore work related aspects of preserved skills, and limitations identified by neuropsychological evaluation in a controlled environment, typically in a vocational evaluation unit. D. Explore utility of compensatory strategies suggested in neuropsychological consultancy or report.

Table 3. Outline of HIRe Model (continued)

Stages and Steps	Activities
3. Vocational Assessment (continued)	E. Assess adaptive psychosocial and vocational behaviors and plan for dealing with potential recurrent problems. F. Arrange a situational assessment in a protected (sheltered) situation and eventually to a community-based site for 1 or 2-1/2 days. G. If appropriate, consider a community-based work trial of 1 to 2 weeks with support. H. Further develop plans for obtaining necessary on- and off-the-job support services and long-term funding.
Community-Based Employment	
4. Job Placement	A. Identify and promote community-based employment alternatives available in the least restrictive environment. B. Prepare and implement community-based employment plan based on evaluation prior to any service phase. This plan will (a) be the product of the evaluation staffing; (b) be prepared by the employment training specialist; (c) identify specific targeted job goal and alternatives; (d) identify work delimiters imposed by client (e.g., minimum pay needed, travel distance from home); (e) identify training services that are anticipated (e.g., job coach time, follow along schedule, transportation); and (f) estimate costs and potential sources to pay for required services. C. Match prospective employee needs (e.g., considering client characteristics, job delimiters and supports needed) to potential job opportunities. D. Interview potential employers and/or conduct orientations for employers and co-workers.
5. Training	A. Instruct client on specific skills and demands of job. B. Prepare method for transferring case to maintenance job coach for long-term support. C. Provide needed employer training and job site preparation. D. Conduct necessary job modification and restructuring or acquire appropriate rehabilitation engineering services. E. Provide further evaluation with individual for potential remediation of needed job skills and adaptive psychosocial behaviors. F. Communicate relevant information and plans to consumer and significant others.

Table 3. Outline of HIRe Model (continued)

Stages and Steps	Activities
5. Training (continued)	G. Establish work routine and off-job support plans with individual and identified long-term maintenance job coach. H. Establish support and intervention network or resources for individual, including long-term funding sources. I. Provide on-job and off-job supports as required.
Maintenance	
6. Fading and Transfer to Maintenance Job Coach	A. Implement plan to fade time intensive support and training services to maintenance job coach. B. Employment training specialist provides necessary in-service to job coach prior to transfer and technical assistance following transfer of follow-along duties. C. Secure long-term funding and alternative services and resources for individual.
7. Long-term Job Coaching and Support	A. Employment training specialist transfers the person to the maintenance job coach. B. Long-term job coaching provided by maintenance job coach. C. Employment training specialist serves as liaison to other members of the care team (e.g., vocational evaluator, neuropsychologist, rehabilitation engineer, rehabilitation counselor and program consultants). D. Employment training specialist and job coach conduct periodic case reviews and employment specialist provides mentorship to job coach.

A specific treatment and rehabilitation plan must be stipulated. Ongoing medical appointments, physical, or speech therapy appointments may interfere with a job. Likewise, involvement in ongoing therapy or support programs do not necessarily preclude involvement in the program, but are factors which must be taken into consideration when arranging a placement.

A physical examination should identify the ability of the person to tolerate a minimum of 20 hours of work per week and document any special precautions that must be taken. Finally, a neuropsychological examination must be performed, if a recent report is not available. Whenever possible, this information should be compiled on the Profiling Forms.

On the basis of background information and the results of a neuropsychological

evaluation, the vocational rehabilitation services are formalized and initiated (Step 3). A prescriptive vocational assessment is structured which involves components designed to assess the following:

1. Ability to use a telephone to search for jobs, or to call in sick (if appropriate).

2. Ability to formulate an independent or counselor assisted structured job search.

3. Exploration (through work sampling or situational assessments) of the skills, abilities, and characteristics necessary to achieve targeted job and residential goals.

4. Ability to function on a community-based employment worksite.

A vocational assessment is scheduled after the aforementioned steps have occurred. The primary prerequisite prior to entry into the program should be the establishment of reasonable immediate job goals. Job goals may include work in supported employment situations, but may also involve return to a previous line of work under supervision of a job coach. Second, the referral must be willing to state and accept both a primary and secondary job goal before further action is taken. Third, an immediate residential or living arrangement goal, which is reasonably achievable given potential resources, must also be identified.

During the course of the assessment, the employment training specialist is actively involved in planning and review of evaluation findings. This person is also available for on-the-job interventions, assisting with behavioral shaping and programming, and providing transportation or other required services when needed. The assessment of the referred person's abilities, strengths, and limitations first takes place in situational assessments in protected situations and then at community-based worksites relevant to their identified job goals.

Community-Based Employment and Training Stage (Steps 4-5)

Training and transition planning are central to the philosophy of this model. Training at the job site begins during assessment. In many cases, the job site used in the assessment will be the targeted supported employment job site. Work supervisors serve as primary trainer-supervisors, with the assistance of the employment training specialist who provides initial training, job specific adaptive aids or work site modifications. The employment training specialist lends assistance in management of problem behaviors and assists by working on problem situations. This treatment-training program is intended to provide whatever services are necessary to make the initial transition to the job site and to begin to provide long-term and ongoing rehabilitation services. Coordination with speech, physical, and occupational therapies, medical or drug treatment programs, psychological or psychiatric treatment, engineering or adaptation, activities or daily living and other services as necessary are arranged at this time.

Maintenance (Steps 6-7)

Maintenance requires transferring primary responsibility from the employment specialist to the long-term maintenance job coach and insuring that necessary supports are in place. The employment training specialist continues as the link with the overall rehabilitation team. These persons functions as an interim case manager and works with the rehabilitation team from intake through placement. The long-term job coach, whenever possible, is introduced to the client at the intake interview, in order to become familiar with them from the onset.

Both the job coach and the employment training specialist are involved in the vocational evaluation to some degree, with the employment training specialist having a greater role in assisting the evaluator in tasks which were time demanding or which required specialized attention. When the person was faded to job maintenance, the employment training specialist is available as necessary when problems arise. Typically, several long-term job coaches should be available for providing long-term job services to the head injury referral. Whereas each site typically may have one employment training specialist for training, many sites will have access to several job coaches to whom the person may be transferred for longer term support services.

For individuals who require ongoing supported employment after the initial phase-in period (which occurred in the majority of Project HIRe cases), a maintenance job coach is gradually introduced. The maintenance job coach begins working with the person by observing their work, social skills, and behaviors at the transitional employment site. Once transition to the long-term site occurs, the maintenance job coach typically is familiar with the person and anticipates the types of work problems likely to occur and follow-up schedules and interventions necessary.

After transition to long-term supported employment, the employment training specialist provides the initial orientation and training to the work supervisor in cooperation with the long-term job coach. The employment training specialist gradually fades involvement, but remains available for a period up to one year during follow-along status or as an immediate resource if necessary. All persons served, however, continue to have immediate re-access to the program for job coaching and/or intervention from the employment training specialist, who in turn will coordinate these activities with other treatment team members (e.g., physicians, psychologists, physical therapists).

The following are the types of support that need to be in place in the maintenance stage:

1. **Financial supports.** The Community Advisory Committee can be used to examine each supported employment situation to secure the appropriate funding stream. A third party to finance long-term ongoing support services should be sought whenever possible. The services of the employment training specialist may be funded through a state vocational rehabilitation agency, an insurance carrier or other third party funding agents, or through fees generated by the services components. The later will rarely be the case for most service providers.

2. **Employment supports.** A number of support staff need to be available for

both the situational assessment, as well as transitional and long-term supported employment program elements. These support staff may include peer workers (such as a work buddy or job mentor) to aid the worker, transportation and residential services staff, local support groups, and family members.

3. **Other support needs to consider.** It should be expected that many persons transferred to long-term job coaches work with community organizations that also serve other disabilities. The typical community-based vocationally oriented, not-for-profit rehabilitation facility serves an average of five to eight persons per year in supported employment situations at any given time. Therefore, specifics regarding rehabilitation needs of persons with a traumatic brain injury must be a primary responsibility of the employment training specialist providing assistance and behavioral intervention. Replacement worker services to fill the role of an employee who is available for work on a particular day must be preplanned, and may be able to be arranged through local resources, and on occasion the involvement of casual employees or sheltered workers from rehabilitation facilities may be used.

Chapter 5

TESTING THE MODEL

Pilot Testing of the Initial Model

The site selected for the pilot study and Model implementation during the first project year was the Clinical Services Programs of the Stout Vocational Rehabilitation Institute of the University of Wisconsin-Stout. This site was selected because it had an established capacity for working with individuals in community-based employment programs and is in the same complex as the Research and Training Center. Two additional sites were later identified for replication of the Model during years two and three.

In order to develop a pool of applicants suitable for supported employment, approximately 10 people were identified within the county who were likely to benefit from supported employment services. People from outside the county were also served during the pilot stages of the project, because few referrals from the county were initially received. The state vocational rehabilitation agency counselors typically served more than one county therefore, persons who were appropriate for the program may have lived as far as 70 miles from the Center. This is common in small towns and rural areas, therefore it was decided to accept referrals which appeared appropriate and who met the intake criteria.

The most time consuming activities encountered in developing this Model included preparation of a mechanism for translating the results of neuropsychological testing into functional terms, structuring vocational evaluations on the basis of background information and neuropsychological data, and obtaining background information, arranging consultation agreements and organizing client files. Establishing a method of contracting with state and county agencies for funding ongoing support services represented a significant effort and a major obstacle to execution of the project at the pilot site.

A preliminary research tool for profiling background information and functional characteristics was developed as a result of activities associated with the completion of the Think Tank. The Vocational Assessment Protocol profiles neuropsychological, physical and psychosocial functions in relation to an individual's vocational goals. This protocol is included in Appendix A, along with other case management instruments developed and used in this project.

Training of participating staff. Training for all levels of service providers was found to be an essential requisite of future success. Education and training programs are a primary consideration necessary in order to foster employment programs. This includes both preservice and in-service training for professionals in disciplines relevant to vocational rehabilitation (i.e., medical, psychological, vocational, educational). Programs were conducted where working job coaches, rehabilitation case managers and counselors, and employment training specialists acquired basic skills necessary to perform their jobs. Similar programs were also found to be of value for parents, advocates, and employers.

Implementation manual. During the course of the piloting, a manual for implementation of the project was devised, client files were arranged and in-service training of the replication sites were completed. By the conclusion of the pilot testing with five persons in employment situations, adequate experience had been gained to identify the nature of the problems which would likely be encountered, and these experiences were brought to the replication site through a series of in-service training and meetings. When it was established that the Project HIRe approach to providing supported employment services would be feasible, the final revisions to the Model approach were made and documented in the introductory materials presented to the replication sites.

Problems Encountered and Solved and Initial Successes

Barriers to program implementation. Because persons serving in roles of job coaches, case managers and project staff needed to be recruited for this position, initial hiring problems delayed the start of the project. Limited funding also placed an artificial cap on the amount of dollars that could be paid to job coaches and case managers. As a result of this and other factors, a relatively high turnover rate was experienced. The pilot site experienced a turnover of three people in the case manager position during the project. There was also a complete turnover of all job coaching staff at both the pilot site and the replication sites.

In addition to the fact that limited funding typically brings in employees who are either in transition from one job to the next, or provides initial job experiences which people often leave after a brief employment period, it can be expected that these are entry level positions will experience frequent turnover. Furthermore, difficulties encountered in working with the difficult situations was often stressful to staff and also contributed to frustration and turnover. Some of the staff frustrations included the fact that one of the clients being served was charged with criminal offenses, one client committed suicide, several people got into personal problems and were either terminated or walked off the job, and others became frequently hostile towards job coaches and case managers to the point where staff moral problems were created. This appears to be typical of other beginning programs in this area especially those dealing with persons with traumatic brain injury. One manner of dealing with the problem of potential turnover was to assign secondary responsibilities to another staff person in a related position (such as a work floor supervisor) to be co-trained with the supported employment staff. In addition to providing fill-in when the primary support staff are off or between staffing turnover occurs, this was found to be a morale builder for the backup person who perceived this as growing for career advancement.

Establishing the applicant pool for the pilot site. The principal investigator and the case manager for this project conducted in-service training at the regional vocational rehabilitation district offices in order to inform them of the intent of this project, and to encourage the vocational rehabilitation counselors to make referrals. It was established that Project HIRe would be responsible for conducting interviews with families, gathering all pertinent background information from hospitals and other sources, arranging for neuropsychological consultations or evaluations if authorized by the state vocational rehabilitation agency, and making arrangements for initial vocational assessments. Following the assessments, if appropriate, an attempt at a community-based job trial in an area of the person's expressed and demonstrated interest and ability were conducted.

It was initially decided that all referrals would be accepted if they met the intake criteria established by the project. Unless long-term commitments could be made for dollars to fund supported employment beyond 18 months (which persons were eligible for under the state vocational rehabilitation agencies funding mechanisms), people were not placed in supported employment positions. This appeared to be reasonable in light of the fact that long-term funding arrangements created a primary problem with other supported employment projects that were consulted. It was also a requirement of the state vocational rehabilitation agency that a contract for a long-term commitment be on file before any of the state agency's funds could be expended for employment related services. As part of this agreement, Project HIRe staff agreed to do the initial job coaching, and when they were stabilized to the point where immediate training needs and stabilization occurred such as the labor intensive initial stages of supported employment were met, they were transferred to a long-term job coach.

Typically, long-term job coaches had limited experience in dealing with persons with traumatic brain injury previous to this project. It was typical for job coaches to have a mixed case load, involving persons with mental retardation, serious and persistent mental illness and traumatic brain injury. Funds provided to Indianhead Enterprises, Inc. were used to assist in creating the job coach positions and was in fact, an initial effort at providing the community-based employment services in the form of supported employment. Therefore, some initial problems came not simply from dealing with persons with traumatic brain injury, but were the result of problems associated with establishing a supported employment program in the first place.

Long-term funding. The client services aspects of this project met with numerous unexpected challenges which delayed the service delivery phase of the Model. One of the primary problems in implementing the Model was the initial program decision to not place any person onto a community worksite until a funding arrangement to finance long-term support was established for the individual. Problems in persuading long-term funding agents (which are primarily the County Developmental Disability Boards in Wisconsin) to finance the long-term supports necessary to maintain a person with a traumatic brain injury in community-based employment continued to thwart efforts to place people into supported work throughout the project. For this reason, project staff had to accept referrals from counties willing to make a commitment for long-term job coaches and community support workers. This involved working with referrals from long distances and required more extensive staff travel. Secondary problems arose from the fact that in the rural areas served by Project HIRe, unlike urban areas, there is a general lack of staff to provide (a) transportation, (b) replacement workers for occasions when supported employees are absent, and (c) job coach resources for assuming cases when the time comes for transferring cases to long-term support.

Quality of neuropsychological information available. Consultations with the Wisconsin and Minnesota agencies, which were also recipients of supported employment grant dollars for persons with traumatic brain injury, noted that the majority of all referrals were from metropolitan areas and thus neuropsychological evaluations were often available with referral information. Unlike persons with a traumatic brain injury who live in these urban areas who frequently receive neuropsychological and therapeutic services, the majority of Project HIRe referrals received no diagnostic or therapeutic services short of emergency hospital examinations and acute medical treatment. For this reason, project HIRe had to develop capabilities of

providing neuropsychological evaluations, rather that simply relying on neuropsychological consultations as originally proposed. This delayed the referral process and consumed considerably more staff time than expected. In instances where neuropsychological reports were available on persons in the project, neuropsychologists often used different instruments to assess functions. For example, some reports contained information extrapolated from the Halstead-Reitan Battery, some used the Luria-Nebraska Battery and the majority included eclectic combinations of tests. Even the most common tests such as the Wechsler Adult Intelligence Scale (WAIS) were not used in a routine manner. For some persons, for instance, the 1964 version of the WAIS was used, while with others the revised version was used, which is considerably different and not truly comparable. It was also common to administer parts but not all of the WAIS or WAIS-R.

Lack of common language as a barrier to comparing diagnostic and demographic characteristics. Problems and barriers to serving persons with traumatic brain injury in rural areas were studied by the project in relation to the difficulties of each site in completing various aspects of the Project HIRe Model. The general trend was that neuropsychological and diagnostic services were limited and often were provided at distant locations. A second characteristic was that there seldom were people in the home community where the person returned to, with a good understanding of the nature the descriptions of problems resulting from the head injury, or therapeutic interventions that were necessary.

Even among neuropsychologists who used the same instruments, not all used the entire test, but rather used selected subtests. For all of these reasons, it was impossible to use neuropsychological test data as elements in the client data set. In order to work around this obstacle, a collateral research project of the Center which developed data collection forms to rate a person's functioning level on the basis of common characteristics was used. The basis for these common characteristics evolved from the research conducted at the Think Tank, as described in a previous section. Using these profiling forms, data on the neuropsychological characteristics of the persons in this project were able to be analyzed for the purpose of this project.

Eligibility difficulties. Since the state vocational rehabilitation agency in one state involved in this project would not accept people who had not been declared eligible for long-term funding by a county or other ageny, none of the clients in the initial referral pool were eligible for support services through the state agency. After three months time had elapsed, and other activities including the assessments, group meetings with the referred clients, family consultations, etc. were completed, project staff needed to begin testing the Model, therefore staff began working with persons who appeared to have limited needs insofar as long-term job coaching. In this case, three persons were placed on jobs who were felt to need only transitional employment rather than longtime and ongoing support services. These initials placements were quite successful, and all three persons were able to work through the Project HIRe system to the point of employment stabilization and eventual closure. Long-term funding (beyond 18 months) was not necessary for these cases. The long-term follow-up in each case was conducted by the state vocational rehabilitation agency counselor, with the intent that if longer term support was necessary they would be referred back to the program for the purpose of obtaining long-term job coaching services.

At the time of this writing, one of these persons had moved out of this geographical region, but was employed in a competitive situation in another state. Another person remained working with the original employer, and a third was subsequently terminated secondary to alcohol and chemical dependency. This person later entered a treatment program for this purpose. Despite the fact that mixed successes were met with long-term outcomes, the project Model appeared to work as projected in the pilot site, therefore a decision to continue the project in the two additional sites was made.

Funding issues. With any service delivery project, many problems surfaced which thwarted initial placement efforts. A primary problem with this project revolved around the difficulty in finding long-term funding. Because long-term funding was a major issue at the Wisconsin site, the County Developmental Disabilities Board (which funds supported employment services for traumatic brain injury survivors in Wisconsin) was solicited for potential support. Three out of 12 of the county slots identified for supported employment were thereby set aside for persons with traumatic brain injury. This therefore limited the amount of persons from this program who could be provided long-term supported employment. Of the additional people referred for project involvement at this site, all had no source of long-term funding had they proceeded to the point of requiring long-term support services. One of these additional persons was found to be inappropriate for supported employment because of inappropriate social interactions and for making sexual innuendos and advances toward females. Due to these problems, the decision to drop this person from the project was made by project staff.

Another individual received an insurance settlement and did not pursue further services. Two other referrals began litigation following entry into the program, and were advised by their attorneys to not accept any type of employment until their lawsuits were settled. One of the apparent outcomes of the thoroughness of the evaluations conducted, was that of identifying the severe nature of the functional problems caused by the brain injury. When this information was presented to the family members, they solicited the support of attorneys and litigation (which had not been initiated prior to the time of this employment program) was initiated.

Revision of the Model Components

After the Model was piloted at the Clinical Services site on the University of Wisconsin-Stout campus, revisions to the Model were made. All procedural information was then provided to the replication sites prior to their implementing the Model. Implementation began at the two sites on a staggered basis with approximately three months between each start. This was done to minimize the demands on project staff and to be able to provide adequate time for staff training and advisement.

MODEL DEMONSTRATION AT REPLICATION SITES

Participating Facilities

Selection of sites. The replication of the final version of the HIRe Model was tested at two rural sites. Sites were selected on the basis of three criteria. First, the sites needed to

agree to fulfill all aspects of the Model project and to allow university project staff to periodically monitor their compliance with the provision of the Model program. Second, the majority of the persons whom they would be serving needed to be originally from rural areas, and the intention of the rehabilitation program was to have been to return these persons to the small towns and rural areas that they originated from during the time of this project. For example, one of the sites, the Ability Building Center in Rochester, Minnesota, primarily selected individuals who were from small towns and rural areas who would be eventually placed back to their home communities after completing the initial aspects of the rehabilitation program. All three clients served at the Indianhead rehabilitation facility were living in predominantly rural areas, and their initial job sites were also in this area. Finally, the sites needed to demonstrate a desire on the part of the staff to become involved in developing a Model program of this nature, and clients needed to be available who would meet the intake criteria as listed previously.

Indianhead Enterprises, Incorporated

Indianhead Enterprises, Inc. is a rehabilitation facility that serves Dunn County, in a rural area of Wisconsin, as well as several surrounding counties. The majority of the referals therefore come from rural or nonurban areas. Indianhead Enterprises, Inc. is located in an industrial park of Menomonie, Wisconsin which has a population of 13,547. Dunn County's population is estimated to be 35,909. This facility serves 66 persons with disabilities per year and an average of 60 persons per day. The staff to client ratio is estimated to be approximately 1 to 12. A supported employment program for persons with traumatic brain injury was developed at the time that this project was initiated, but no longer exists due to funding difficulties.

Ability Building Center (ABC)

Ability Building Center (ABC) in Rochester, Minnesota is a rehabilitation facility which served 421 in the last project year, with an average of 300 persons typically served per day. This total includes persons served in supported employment, facility based programs, as well as assessment and training related service elements. ABC is associated with two other facilities, Woodland Industries, a smaller sheltered workshop in Houston County, Minnesota and Ability Enterprises, a day training and habilitation facility in Rochester serving primarily severely disabled persons. ABC reports employing 76 staff members, Woodland Industries employs 6, and Ability Enterprises has 20. Staff to client ratios varied in each facility according to the severity of disability of client group at any particular work station or community placement.

The communities served by ABC and its associated facilities includes all of southeastern Minnesota. The community of Rochester, Minnesota has 70,000 residents. Rochester is in Olmstead County which has a total of 110,000 residents. The majority of the persons studied during this project lived in rural areas of Minnesota and attended the ABC program as an adjunct to services being received through the Mayo Outpatient Brain Injury Program.

Contractual Relationship Between Site and Project

Approximately $7000 per year was provided to each replication site as an incentive to become involved in this research. In addition, on-site staff training and travel to conferences

and workshops in the area of traumatic brain injury rehabilitation were also provided as part of the incentive package to become involved in this program. Free materials in the form of books, training materials, rating instruments, and data collection and case management materials were also provided.

The primary stated reason for involvement in the project, however, was not the financial incentives but rather a desire on the part of staff to become involved in research and to develop a new program for providing community-based employment for persons with traumatic brain injury. Both projects informed the Research and Training Center that the cost of providing programs in the community for these population far exceeded the amounts of dollars provided to them for their participation.

Requirements of sites. Each site was required to provide information to the project on each of the seven background information or profiling forms as well as the seven rating scales used to document additional data. All of this information was included in the form of a start up kit, one of which was available for each new client referred to the program. In addition, quarterly reports detailing services provided, clients served and expenditure of funds were given. Both sites were also required to send staff to training programs and to provide weekly contacts with staff of Project HIRe.

Length of site participation. Both projects participated with Project HIRe for approximately one and one-half years. Following receipt of the last quarterly installment, both projects continued to provide follow-up data without additional charges in order to give the project staff additional information regarding outcome data.

Contractual arrangements were worked out with each of the rehabilitation facilities which served to provide services as replication sites. Both the Ability Building Center and Indianhead Enterprises received a contract which stipulated how the dollars could be used for enhancing staff training, providing transportation or reinforcements to clients being served or to provide co-funding of additional staff persons where necessary. A sample copy is included in Appendix C.

Coordination Between Sites and Project

Each site was assigned a site coordinator as a primary contact, who was responsible for providing information to the Head Injury Re-entry Project. Weekly phone contacts were maintained each Friday to monitor progress. In addition, quarterly reports were received from each site which identified the number of persons referred into the project, number of persons placed on job sites or in evaluation programs, and the funds expended and the purpose of the expenditures. In both sites, portions of the monies allocated for services were earmarked for co-funding job coach positions. This was done in part because of the demands of working with the traumatically brain injured population and in part due to the demands associated with providing documentation data for this project.

Start Up Packages for Replication Sites

In order to provide replication sites with all information in a centralized location for easy

reference, implementation packages were developed and presented prior to implementation of the project. The implementation packages included data collection instruments and a protocol for their use and journal articles, books, and publications dealing with community-based employment and traumatic brain injury. Many of these materials were collected in preparation for the Think Tank and National Conference. In addition to this information, specific procedures, contracts, and guidelines for implementing the project were provided to each site.

A documentation packet for each person identified for services within the project was also provided. For each new person referred to the replication sites for services, a complete client package was therefore available. This included a filing system for collecting data, all forms necessary for collecting information, and orientation materials and releases of information. Employment support groups were conducted at each site. The site within the same county as the University of Wisconsin-Stout Research and Training Center continued with the employment support group initiated during the course of the pilot study. In fact, all of the referrals made to the local replication site included clients involved in the project who had not yet been provided employment related services. The second site, continued with a employment support group which had been initiated prior to their involvement in this project.

Staff Development and Training

Staff from both of the replication sites were provided with training as described in an earlier section. The majority of the training focused on the use of the implementation of the Model and data collection forms to assess the Model. Periodic meetings were held to ensure compliance with the Model and to discuss difficulties that arose. Some of these meetings were conducted on site and two of the meetings were conducted at the Research and Training Center. Staff from both facilities also had the opportunity to view each other's programs in order to exchange information and get a better idea of how the project was being implemented in each site.

Intended Outcomes and Impacts

Numbers of persons served. It was expected that four to six people would be served at the pilot site as well as the two replication sites selected for implementation of the project during Model years two and three. In addition, it was also anticipated that some other individual facility referrals would be made to smaller rural programs, with an additional 10 to 12 persons being served. In total, it was expected that 22 to 30 people would be served by this project.

Anticipated employment earnings and benefits. It was expected that earnings would be at least at the minimum wage level for persons in supported employment, and it was expected that there would likely be one to two job changes based on the experience reported for similar projects.

Anticipated integration benefits. It was also expected that the persons placed on jobs would have opportunities for integration into competitive employment sites, including integration with nondisabled peers. It was also felt that integration off the job would be available to persons as well, and thus measures of both on-the-job and off-the-job integration were kept.

Data Collection for Description and Evaluation Purposes

Family and client perceptions of individuals with traumatic brain injury. Family and client perceptions of the progress on-the-job site were tracked as part of this project. Data was kept with parallel forms of a rating scale which was an abbreviation of key elements from the Vocational Adaptivity Scale completed by work supervisors. On a quarterly basis, both the work supervisor and the family and the individual were asked to complete these rating forms to compare their views of employment related characteristics.

On-the-job and off-the-job supports. The types and extent of on-the-job and off-the-job supports were also tracked on the Daily Monitoring Forms. These rating forms broke down the types of supports in relation to the number of hours spent in each activity, as well as whether or not a particular type of support service was provided for any given week. In this manner, patterns of support services were able to be tracked for each individual across their length involvement in the project.

Clinical characteristics of individuals entering community-based employment. Clinical aspects and characteristics of persons with traumatic brain injury entering community-based employment studies were examined by determining the type and nature of interactions of these people with their environment. The backgrounds that these people brought with them to their supported employment programs, and their day to day interactions with supervisors and job coaches were also important factors that became evident as the project developed. No formal rating devices were used to obtain these clinical impressions, however, it soon became clear that various difficulties consistently began to emerge. Patterns of premorbid personality difficulties including backgrounds of parental abuse, previous substance abuse, and criminal histories were apparent with several of the individuals, and these characteristics tended to continue to negatively affect community integration efforts.

Functional capacities of individuals. The functional capacities of persons with traumatic brain injury were examined using the Functional Assessment Inventory (Crewe & Athelstan, 1984). This instrument examined a wide range of characteristics including cognitive, physical and self-care skills. Each person in the project was profiled on the Functional Assessment Inventory shortly after their referral to the program. In addition, on-the-job work skills as well as ability to independently search for employment and participate in interviews was tracked using the Vocational Adaptivity Scale. This also was also completed on each referral to the program during the course of the evaluation stage of their program.

Vocational and employment history. Vocational and employment history of all persons served was tracked using the intake interview information. A structured interview format which detailed the work history of each person was reviewed in a clinical sense to determine the nature of their past work experiences, and to attempt to examine pre-injury work interest patterns. It was found that in most cases, person's pre-injury work interests were very similar to their present vocational interests.

Service needs. Service needs of persons referred to the program were tracked by information obtained on the Background Information and Family Interview Form. Each person was profiled regarding service needs by a family member or significant other who knew the

person well. Previous history with a similar instrument demonstrated that persons with traumatic brain injury were not able to provide accurate pictures of their rehabilitation needs or the services provided, especially when the person being profiled had a moderate to severe injury. Rehabilitation services received and those still needed were identified in areas of medical rehabilitation, support and therapy services, vocational rehabilitation and other areas.

Chapter 6

PROGRAM EVALUATION FINDINGS AND RECOMMENDATIONS

The evaluation and data collection phase of Project HIRe gathered a comprehensive cross-section of information on individuals participating in the pilot site and two replications sites in Menomonie, Wisconsin and Rochester, Minnesota. Seventeen people participated in the replication phase of the project. Evaluation results and conclusions reported in this document are based on case data collected and on the experiences reported by project staff.

The data set used in parts of this document included standard intake data; historical information on pre and post injury status; functional profiles; employment and integration data; monitoring of on-the-job and off-the-job support; measures of adaptation as perceived by consumers, their family, and employers; and anecdotal entries by project staff. These data are supplemented with documentation of how the HIRe Model was implemented at each site, and how unique resource and access problems in rural Wisconsin were overcome.

Both statistically derived and clinical case studies were prepared for both successful and unsuccessful program participants. Such composites were used to depict examples of and consequences of traumatic brain injury on eventual community integration. In addition to documenting the benefits on the HIRe Model among severely disabled individuals, this evaluation identifies basic problems that limit maintenance of community-based employment in rural communities and presents recommendations on how to increase the likelihood of success in program development in rural settings. The broader priority issues that need to be jointly addressed in vocational rehabilitation and identifies critical public policy issues that must be resolved to promote consistent service delivery for these severely affected individuals are addressed in Chapter 3.

Evaluation Data Collection

Data was gathered at the time of intake and forwarded to the Research and Training Center for data entry as it became available. Copies of the vocational evaluation and neuropsychological reports were also forwarded to the Center to provide a clinical picture of the type of assets and limitations that each person brought to the program. Weekly contact sheets were used to examine difficulties being countered on the job, and the types of support services needed to overcome problems as they arose. Daily Monitoring Forms were completed on a weekly basis. In addition to reporting the intensity and types of support needed, type of employment, pay, and the degree of integration achieved each week were also reported on this form. On a quarterly basis, the family and employer ratings of problems were compared to employee self-ratings and used to provide feedback to the client workers and to the family regarding difficulties perceived by each individual. Case studies were compiled on each individual which gave a general overview of the accident information, type of rehabilitation that took place and services provided in the course of this study. Three of these in-depth case studies are provided in another section of this report.

Table 4 provides a breakdown of the number of persons served at the pilot site and replication sites. Reasons why individuals were not retained are summarized on that table. Data was gathered on each person who was accepted into the program, based on whether or not they met the intake criteria. A review of Table 4 reveals that a number of subjects were lost from the sample due to various reasons. One person assessed at the pilot site was referred back to the facility in their home community. That facility refused to provide the detailed information regarding job coaching and outcome. This person later died as the result of a suicide. Another persons served at the pilot site was hospitalized for medical reasons associated with a seizure disorder which required brain surgery to remove a cerebral infarction.

Table 4. Persons Served through Project HIRe During Pilot and Model Demonstration

Project Participation and Reasons	Pilot Site	Demonstration Sites		Total at End of project	Totals 4 Months after Project Ended
	UW-Stout	ABC	Indianhead		
Subjects Participating in HIRe	10	13	4	27	27
Supported or Competitive Employment	8	10	3	21	15
Not Participating	2	3	1	6	12

Monitoring the Implementation of the Model

To ensure that the model was implemented in the manner proposed, site visits were made to each respective site and follow-up telephone conversations were made to monitor site activities. In general, the rehabilitation facilities adapted the HIRe processes and procedures to local conditions. Every attempt was made to follow the Model design as outlined in order ensure the integrity of the Model. Weekly and monthly data tracking forms helped to determine whether or not information was being collected as proposed and how alternative program path outlines were provided to individuals at the sites.

Adaptation of the HIRe Model at Each Site

The Project HIRe Model was adapted at both of the rehabilitation facility sites in a similar manner. At the Indianhead Enterprises site, which is a smaller facility than the Ability Building Center, four clients were identified for the project, and three of them were able to be placed in community-based employment. Each of these persons were provided services sequentially as they were referred to the program.

At the Ability Building Center site, clients were referred to the program in one of two manners. First, new clients were referred with the entire process of intake and assessment, vocational evaluation and community re-entry attempted as defined by the Project HIRe Model. A second type of referral was made by taking persons who had already been placed in community-based employment and were having ongoing problems which required specialized employment support services. Both types of referrals are discussed in the following section.

Program Path Information

A program path was defined for each person on referral to the program. First the decision was made whether or not the person met the intake criteria, and if they did, one of two program paths was selected. The first option was to evaluate the person, proceed with a job trial and then move to community-based employment, which typically involved supported employment at a community-based site.

If a person was already in a community-based job, they were assessed and returned directly back into employment with identified community supports provided by project staff. This second option path was used in cases where persons were having difficulties in employment and had specific unidentified employment related needs important to their successfully maintaining their job. With this option, they were taken from their employment site for a vocational evaluation and eventually returned to their original employment accompanied by either the employment training specialist or job coach.

Table 5 displays the path options as used with each subject at the two replication sites. For the majority, these paths proved to be workable for all persons served. The data in Table 5 provides information regarding how each of the elements in the program model were provided. The majority were referred to the program before they were tried in some type of community-based worksite. The majority of the clients served at the pilot site and in the Wisconsin replication site were provided neuropsychological consultation services or evaluation at the University of Wisconsin-Stout. Most of these persons had not had a neuropsychological evaluation.

For those participating at the Rochester site, the majority received neuropsychological evaluations or consultations at the Mayo Clinic Outpatient Brain Injury Program. Many of these referrals received primary medical treatment outside of the Mayo Clinic system. For these individuals, a neuropsychological evaluation may have been completed elsewhere. Some were referred directly into community-based employment, since vocational evaluations had been completed prior to their referral to this project. Whenever possible, if they were to be placed directly into community-based employment, the initial placement was a job trial. In these cases, a transitional job coach was available to teach work tasks and deal with problems on the job. In other cases, persons were placed directly into community-based employment, since job trials had been completed at other rehabilitation facilities and were not deemed necessary prior to placement in this project.

Table 5. Summary of Experience for 27 Persons Referred to Project HIRe

Sites and HIRe Subject ID Number	HIRe Program Path	Where HIRe Supported Employment Model Activity Took Place					Support Transferred to Long-term Job Coach Yes/No	Outcome of Project	
		Neuropsychological Assessment Provider	Vocational Assessment Provider	Work Trial Site	Job Training Site	Type of Support Provider		Exit/End	Four Month Follow-Up
Pilot Site UW-Stout 114	A	UW-Stout	UW-Stout	Janitorial Local Hospital	UW-Stout & Job Site	Off Site	Yes	Individual Supported	Employment Competitive
115	A	UW-Stout	UW-Stout	Competitive Work Trial	On Site	Off Site	Yes	Individual Supported	Employment Competitive
121	A	UW-Stout	UW-Stout	With former employer	UW-Stout & On Site	Off Site	Yes	Individual Supported	Competitive Employment
126	A	UW-Stout	Situational Assessment Only	Humane Society Only	On Site	On Site	Yes	Individual Supported	Supported Employment
128	A	UW-Stout	UW-Stout	Competitive Protected Site	N/A	N/A	N/A	Hospitalized (Brain Surgery)	Unemployed
129	A	UW-Stout	Situational Assessment Only	Competitive Project Site	On Site	On Site	Yes	Indianhead Supported	Employment Competitive Moved Out Of State
130	A	With Referral Information	UW-Stout	Competitive Protected Site	On Site	On Site	Yes	Individual Supported	Unemployed
131	A	UW-Stout	Situational Assessment Only	Maintenance Enclave	On Site	On Site	Yes	Work Crew Supported	Deceased (Suicide)
132	A	With Referral Information	Situational Assessment Only	Delivery Route Enclave	On Site	On Site	Yes	Work Crew Supported	Supported Employment Work Crew
133	A	UW-Stout	UW-Stout	Volunteer Peer Counselor	On Site	On Site	No	Volunteer Work	Graduate Student

Table 5 (continued): Summary of Experience for 27 Persons Referred to Project HIRe

Sites and HIRe Subject ID Number	HIRe Program Path	Where HIRe Supported Employment Model Activity Took Place					Support Transferred to Long-term Job Coach Yes/No	Outcomes of Project	
		Neuropsychological Assessment Provider	Vocational Assessment Provider	Work Trial Site	Job Training Site	Type of Support Provider		Exit/End	Four Month Follow-Up
Indianhead Site 112	A	UW-Stout	UW-Stout	UW-Stout Protective Emp	On Site	On Site	Yes	File Clerk Supported	Independent Supported
113	A	With Referral Information	Indianhead	Factory Enclave	On Site	On Site	Yes	Inspector Supported	Independent Supported
124	A	UW-Stout	UW-Stout	Independent Supported Site	On Site	On Site	Yes	Work Crew Supported	Work Crew Supported
ABC Site 101	B	Mayo	ABC	Rental Outlet	On Site	On Site	Yes	Rental Outlet Supported	Unemployed
102	B	ABC	ABC	Mayo Clinic	On Site	On Site	Yes	Janitorial Supported	Janitorial Supported
110	A	Mayo Outpatient	ABC	Janitorial Enclave	On Site	On Site	Yes	Recycling Supported	Sheltered Employment
111	A	Mayo	ABC	ABC	On Site	On Site	Yes	Work Activity Sheltered	Sheltered Employment
116	A	Mayo	ABC	Independent Supported Site	On Site	On Site	Yes	Enclave Supported Dishwasher	Enclave Supported Dishwasher
117	A	Mayo	ABC	Sheltered ABC (maintenance)	On Site	On Site	No	Not Placed	Hospitalized Cerebral Lemphoma
118	A	Mayo	ABC	Sheltered ABC (Assembly)	On Site	On Site	Yes	Recycling Supported	Factory Assembly Supported in Hometown
119	A	Mayo Outpatient	ABC	ABC (Assembly)	On Site	On Site	No	Work Activity Sheltered	Work Activity Sheltered

Table 5 (continued). Summary of Experience for 27 Persons Referred to Project HIRe

Sites and HIRe Subject	HIRe Program Path	Where HIRe Supported Employment Model Activity Took Place					Support Transferred to Long-term Job Coach Yes/No	Outcome of Project	
		Neuropsychological Assessment Provider	Vocational Assessment Provider	Work Trial Site	Job Training Site	Type of Support Provider		Exit/End	Four Month Follow-Up Outcome
120	A	Mayo	ABC	Sheltered ABC	No ABC	On Site	Yes	Nursing Assistant Supported	Nursing Assistant Supported
122	A	Mayo	ABC	Sheltered ABC	On Site	On Site	No	Competitive Sales	Competitive Employment
123	A	Mayo	ABC	ABC Sheltered Service Center	On Site	On Site	Yes	Independent Supported Message Runner	Supported Employment
125	A	Mayo	ABC	ABC Sheltered Service Center	On Site	On Site	Yes	Employment Supported (Stocked Shelves)	Employment Supported (Stocked Shelves)
127	A	Mayo	ABC	Warehouse Worker	On Site	On Site	Yes	Supported Employment (Rental Depot)	Quit Job AODA & Back Pain

Program Path

*A = Assessment, Job Trial, Supported Employment

B = Supported Employment (Previously had Assessment and/or Job Trial)

General Characteristics of Individuals Served

Demographics. Table 6 presents the data describing the characteristics of the persons served in the project. In total, 27 persons were served in some capacity by Project HIRe. Of these, 19 were male and 8 were female. The average age at the referral to the program was 25. A considerable amount of variation between ages is evident, with the youngest person being 18 and the oldest being 51. All persons in the sample were white. This is a cultural phenomena of the midwest and the rural areas included in this study. Marital status for most persons, prior to injury to the time of entry into the project remained approximately the same.

Coma and amnesia. The period of time in a coma and the period of post-traumatic amnesia are typically indicators of the severity of the resulting head injury. Since the information collected was provided by significant others within the head injured person's life, the data may not reflect the accuracy that would have been obtained had hospital records been examined. Hospital records were examined whenever possible to verify the family information and it was found that families were accurate in describing both the coma period and the amnesia period. In many cases, since persons were served in small town hospitals, accurate records of both the length of coma and amnesia period were not available in the records.

The average coma length was approximately 32 days, with wide variation being reported among the various subjects. It is curious to note that the average number of days described for amnesia was 16, again with a fairly wide standard deviation being reported. Typically, research literatures suggests that the post-traumatic amnesia period may be 1.5 to three times that of the coma period. In this project, the unexpected short duration of the amnesia period was felt to be related to two primary factors. The individuals with the longest coma periods (which tended to bring the average of number of days in coma higher) for the entire group were not reported. It was difficult for the family in many cases to distinguish when the person emerged from a period of post-traumatic amnesia and which of the amnestic type difficulties were related to memory deficits because of the severe nature of the head injury. For this reason, family members and significant others did not wish to report coma time due to uncertainty. A second factor for the apparently short post-traumatic amnesia periods in relation to the long comas periods was that the period of post-traumatic amnesia is more difficult to quantify, and therefore may be underestimated in the reporting of this data.

Cause and severity of injury. The data on Table 6 also reveals that the majority of persons studied were considered to have a closed head injury. Seven out of 13 also had a skull fracture as a result of the injury, suggesting the relative severity of the blow to the head that was sustained. Also, the majority of the injuries were sustained in motor vehicle accidents, with one-third of all cases related to alcohol use.

A review of the information regarding the nature of the initial brain injuries and the types of problems being exhibited pointed out the fact that all persons served in this project had significant and severe injuries, whom without support of job coaches and case managers would likely not have the opportunity to access or re-access competitive employment in community-based situations. The general findings of the project, however, were that it was not necessarily the degree of physical disablement that precluded people from working as much as the factors

Table 6. Personal Characteristics and Accident Information

Characteristic	Frequency
Sex (N=27)	
Male	19
Female	8
Race (N=27)	
White	100.0%
Other	0.0%
Marital Status Prior to Injury (N=27)	
Single	16
Married	5
Divorced	1
Separated	2
No Response	3
Marital Status After Injury (N=27)	
Single	15
Married	7
Divorced	3
Separated	0
No response	2

Accident Information	Frequency
Injury was Considered (N=27)	
Closed head injury	21
Open head injury	1
Skull fracture sustained	7
Uncertain	1
No response	4
Cause of Injury (N=27)	
Car w/seat belt	3
Car w/out seat belt	4
Cycle w/out helmet	3
Bicycle w/out helmet	1
Other vehicle	2
Hit by car	2
Fall	2
Other	6
Car - seat belt	3
No response	2
Alcohol Related Accident (N=27)	
Yes	5
No	10
Unknown	5
No response	7

Age	N	Mean	Median	Std Dev
Injury	25	21.68	18.0	11.371
Referral	25	30.40	29.0	9.866

Coma and Amnesia	N	Mean	Median	Std Dev
Number of days in coma	16	31.875	21.00	42.658
Length of amnesia	10	16.00	17.50	14.915

such as lack of insight into the nature of their problems, interpersonal problems, and social and adaptive behavior difficulties.

People who were less predictable in their behavior tended to be the ones that had the most problems. For example, two of the more severely disabled persons from both a cognitive skills and physical skills perspective were very predictable in the manner in which they interacted with other persons. They, therefore, could be managed at the worksite by working around these difficulties. The persons who exhibited wide swings in mood and style of

interactions seemed to "catch their employers off guard" and were more likely to exhibit work related problems and work termination because of these behaviors. Employability, therefore, is not only a function of severity of disabilities, but stability of the disability as well.

Descriptors of Traumatic Brain Injury at Referral

Physical. At the time of referral into Project HIRe, information was gathered from family members or significant others regarding their perception of the problems encountered by the head injured person. Data was collected using the Family Interview Form (included in Appendix A). Problem areas were divided into six categories for convenience in reporting these data. An examination of Table 7 will demonstrate the nature and severity of the problems being reported. Of the physical problems listed, balance was the most common problem, followed by difficulties with walking and lifting. Note that none of the subjects in this study reported spinal cord injuries.

Table 7. Problems Identified for Persons Entering Project HIRe

Problem Areas	Percent Reporting	Problem Areas	Percent Reporting
Physical (N=24)		**Emotional/Behavior (N=23)**	
Balance	60.9	Frustration	75.0
Walking	43.5	Depression	60.9
Lifting	34.8	Anxiety	54.2
Spinal Cord Injury	0.0	Anger	54.2
		Alcohol/Chemical Abuse	17.4
Sensory/Motor (N=24)		Paranoid/Suspicious	12.5
Coordination	78.3	Out of Control	12.5
Seizures	34.8		
Visual	29.2	**Social Adjustment (N=25)**	
Pain Perception	17.6	Poor Judgement	56.0
Other	17.4	Awkward or Uncomfortable	44.0
Smell	5.0	Irritable	36.0
Hearing	4.3	Impulsive	36.0
Taste	0.0	Abandoned/Rejected by Friends	32.0
Cognitive (N=20)		Immature	28.0
Memory	85.7	Aggressive-Nonassaultive	20.0
Visual Spatial	75.0	Other	8.3
Defining and Carrying out Goals	73.7	Aggressive-Assaultive	8.0
Attention	57.9		
Self-Monitoring Behavior	55.0	**Mobility (N=25)**	
Expressive Language	52.6	Walks Independently	77.8
Receptive Language	50.0	Crutches/Walker/Cane	11.1
Sequencing Events	47.4	Standard Wheelchair	3.7
Analyze Social Situations	42.1		
Writing	33.3		

Sensory. Within the sensory motor area, 78 percent reported difficulty with coordination, as the highest incidence of all difficulties listed. Over a third reported having seizures, and an examination of this data shows that the majority had a history of seizures, but all of them were either well controlled or in remission at the time of placement into competitive employment. Well controlled seizures were defined as being of relatively low incidence (i.e., less than two times per year), and with adequate pre-ictal warnings in the form of an aura. Finally, well controlled seizures were determined to be controlled in the sense that the convulsions were of relative short duration.

Cognitive. Of the cognitive problems noted, memory difficulties topped the list at nearly 86 percent. This was followed by difficulties in visual-spatial skills and defining and carrying out goals, with nearly three quarters of the persons reporting difficulties in this area. All of the cognitive problems listed were admitted to by at least a third or more of the respondents, indicating the significance of the cognitive related deficits as sequela to these injuries.

Emotional behavioral. Emotional and behavioral problems were common, with three quarters of the persons reporting feelings of frustration, 60 percent reporting depression and over half of them reporting anxiety and anger. This is typical for persons with severe head injury, with frustration, depression and anxiety being the primary emotional behavioral problems exhibited. Few of any of the subjects indicated difficulty with any of the psychotic symptoms such as paranoid behavior or hallucinations. Alcohol and chemical abuse was reported to be a problem in a full 17.4 percent of all cases identified.

Social adjustment. Social adjustment problems were identified in approximately half of all persons, and the majority were having difficulties with poor judgement and awkwardness in social situations. Approximately a third of the population were described as being irritable, impulsive and feeling as though they were being rejected by others. Two people were found to be aggressive and assaultive toward other individuals. These persons needed to be placed in situations in which physical aggressiveness would not place other workers in any immediate danger.

Mobility. The mobility factors which were examined showed that the majority of all persons walked independently, with only 3.7 percent requiring a wheel chair, and 11.1 percent requiring some type of crutches, walkers or cane.

Services Needs At Referral to HIRe

A determination of service needs were also made as the people entered the program (See Table 8). For the sake of clarity, service needs were divided into six areas. Among the employment needs, vocational evaluation services topped the list, with nearly half of the persons having received this service, while another nearly 26 percent were involved in or were in referral to evaluation. Work adjustment services and job placement and follow-along services were received by a quarter of the sample.

Eighteen and a half percent of the persons had previously been served in community-based employment, and nearly 15 percent were involved in a community-based employment situation at the time of referral to the project. These individuals had specialized needs

Table 8. Service Needs as Identified by Family Members (N=27)

Service Needs	Previously Received	Receiving at HIRe Start
Diagnostic and Evaluative		
Speech/Language Evaluation	59.3	3.7
Neuropsychological Evaluation	55.6	14.8
Visual	18.5	7.4
Hearing	18.5	3.7
Other	3.7	3.7
Medical Oriented		
Medical Care at Home	29.6	11.1
Epilepsy Services	7.4	14.8
Attendant Care	7.4	11.1
Nursing Services at Home	3.7	18.5
Therapy and Education		
Physical Therapy	44.4	18.5
Speech Therapy	44.4	14.8
Occupational Therapy	40.7	14.8
Recreational Therapy	33.3	29.6
Cognitive Rehabilitation	33.3	18.5
Education	22.2	7.4
Counseling/Mental Health Services	18.5	18.5
Family Peer Support	18.5	22.2
Social Skills Training	11.1	11.1
Case Management	7.4	22.2
Behavior Management Programs	7.4	14.8
Alcohol and Drug Counseling	3.7	11.1
Employment Related		
Vocational Evaluation	48.1	25.9
Work Adjustment	25.9	11.1
Job Placement/Follow Along Services	25.9	29.6
Vocational Training	22.2	7.4
Supported Employment	18.5	14.8
Daily Living Skills Training	14.8	7.4
Day Services	14.8	0.0
Sheltered Workshop Employment at Less Than Minimum Wages	11.1	7.4
Special Adaptive Equipment or Devices	7.4	0.0
Independent Living Needs		
Group Home	11.1	3.7
Supervised Living Arrangement	3.7	14.8
Other	3.7	11.1
Live-in Attendant	0.0	7.4
Respite Care	0.0	7.4
Other		
Financial Assistance or Aid	18.5	25.9
Accessible Community Transportation	3.7	14.8
Dependent Child Care Services	3.7	7.4
Sexual Counseling and Education	3.7	11.1

involving assessment and community worksite supports that required additional assessment and services which were provided through this project.

Of the remaining services described, the ones that were reported as needed and received most frequently involved neuropsychological evaluation services, speech and language evaluation services, and therapies including physical and occupational therapies.

Employment and Educational Status at Referral

The employment and education status of persons referred to the program is shown in Table 9. The majority of all persons (55.5%) had completed high school or a general

Table 9. Education, Employment, and Earnings Prior to Referral

Status Measure	Percents Prior to Injury	Since Injury
Education (N=20)		
Grade School	7.4	00.0
High School and GED	55.5	48.1
College	7.4	00.0
Vocational Technical Training	3.7	14.8
Employment (N=23)		
Not employed	47.8	52.2
Community-Based Employment	52.1	34.7
Competitive (including supported employment)	39.1	21.7
Subsidized (JTPA)	4.3	8.7
Self-Employed or Homemaker	8.7	4.3
Sheltered Employment	0.0	13.00
Day Activity Center	0.0	0.0
Work Activity Center	0.0	4.3
Sheltered Employment	0.0	8.7
Potential Impact of TBI on Earnings (N=27)	**After Injury** Short-Term Earnings	Long-Term Earning
No Effect	3.7	7.4
Mild Reduction	11.1	11.1
Substantial Reduction	25.9	33.3
Severe Reduction	48.1	33.3

education equivalency diploma prior to their injury. Of those who did not, all of the remaining persons completed their GED or actual high school course work to receive their high school diploma after their injury. Although 14.8 percent were noted to have been involved in vocational and technical training since their injury, none of the individuals attended college after their injury.

Prior to the injury, 11 persons were not employed in any manner, and at the time of the referral to this project, 12 were unemployed. Although 9 persons had been competitively employed prior to their injury, only 5 of those were competitively employed at the time of referral. Some of these individuals were employed but were having problems that required referral for employment support services and some were referred while in a community-based employment program because of additional needs secondary to the traumatic brain injury. Of the 12 persons who were reported as being employed at the time of referral, the vast majority (83%) were considered part time. For those employed previous to the injury, a large majority (67%) were considered full time.

Table 9 also suggest the effects of the traumatic brain injury on both short-term and long-term earning potentials of the head injured person. This information was provided by the family members and shows their concern over the serious effects on the earning potential. In the short-term, only 14.8 percent report little or no reduction in earning potential. These figures represent persons who had a significant head injury, but for whom referral back to a previous employer at the same or similar job was intended. The long-term effects were felt to be less severe for the majority of the persons served, notably because of the potential for improving work skills, and recovery process which family members felt would continue to occur. In summary, nearly three quarters of the families felt that there was a substantial reduction in short-term earnings, and approximately two thirds felt there would be deleterious affects on long-term earning potential of their affected family members.

Clinical Descriptors of Persons Entering Employment

Information on a total of 23 clients was obtained on the Functional Assessment Inventory (FAI). This measure (Crewe & Athelson, 1984) was designed to assess a person's functional abilities which are transferable to the employment settings. Table 10 illustrates the descriptive measures associated with the administration of the FAI. Although these ratings were made at the time of referral to the program, these factors tended to remain stable and therefore a good indicator of the nature of the problems that persons had on the job.

Functional limitations. The distribution of scores within the category of cognitive skills, showed that the majority of the persons included in this study had significant problems with learning ability, memory and spatial relations. To a lesser degree, some problems were evident in the areas of speech, reading and writing ability, with the fewest number of persons having deficits in actual expressive language. For the most part, ability to retain new information on the job which is a function of both new learning ability and historical memory seemed to be the most problematic.

In the domain of vision, approximately 26 percent indicated minor problems and 9.0 percent indicated a moderate degree of problems. In regard to hearing, the majority (96.0%)

Table 10. Severity of Impairments Rated on
The Functional Assessment Inventory

Functional Categories and Specific Sub-Categories	Percents and Extent of Impairment None	Mild	Moderate	Severe
Vision	65.0	26.0	9.0	0.0
Hearing	96.0	4.0	0.0	0.0
Economic Disincentives	42.0	25.0	33.0	0.0
Cognitive				
Learning ability	4.0	25.0	33.0	21.0
Ability to read and write in English	33.0	42.0	25.0	0.0
Memory	0.0	12.0	48.0	40.0
Spatial and form perception	4.0	32.0	48.0	16.0
Speech	44.0	35.0	21.0	0.0
Language functioning	78.0	17.0	4.0	0.0
Motor				
Upper extremity functioning	57.0	13.0	30.0	0.0
Hand functioning	39.0	48.0	13.0	0.0
Motor speed	13.0	48.0	35.0	4.0
Ambulation or mobility	48.0	30.0	22.0	0.0
Medical Conditions				
Capacity for exertion	48.0	22.0	17.0	13.0
Endurance	57.0	26.0	17.0	0.0
Loss of time from work	74.0	22.0	4.0	0.0
Stability of condition	22.0	26.0	52.0	0.0
Vocational Qualification				
Work history	17.0	46.0	16.0	21.0
Acceptability to employers	8.0	38.0	37.0	17.0
Personal attractiveness	54.0	29.0	13.0	4.0
Skills	8.0	4.0	67.0	21.0
Access to job opportunity	25.0	42.0	25.0	8.0
Work habits	16.0	20.0	60.0	4.0
Adaptive Behavior				
Social support system	65.0	22.0	13.0	0.0
Accurate perception of capabilities and limitations	0.0	28.0	28.0	44.0
Effective interaction with employees and co-workers	38.0	21.0	29.0	13.0
Judgement	13.0	33.0	42.0	12.0
Congruence of behavior with rehabilitation goals	54.0	25.0	17.0	4.0
Initiative and problem solving	12.0	21.0	17.0	0.0

Table 10. Severity of Impairments Rated on The Functional Assessment Inventory (continued)

Strengths	Percent Judged to Have Strengths
Physical appearance	0.0
Personality	25.0
Intelligence	17.0
Vocational skill	4.0
Education	8.0
Supportive family	12.0
Sufficient money	17.0
Motivation	25.0
Job available	8.0
Initiative	4.0

had no problems. In the motor skills area, the greatest problems noted were in the area of motor speed, and to some degree, hand functioning. Upper extremity functioning was also problematic although a larger percentage reported having no problems whatsoever in this area. More than half of the respondents suggested that problems with ambulation or mobility existed.

Insofar as medical conditions, capacity for exertion, endurance and stability of conditions seemed to be the primary difficulties. Seventy four percent did not report any difficulty of a medical nature which caused loss of time from work.

From the perspective of vocational qualifications, all areas listed suggested significant problems, with the exception of the item entitled "Personal Attractiveness." The majority of the persons rated were judged to be without problems in this area, however, the areas including work history, acceptability to employers, skills, access to job opportunities and work habits were consistently rated as being a mild to significant problem. The majority also commented that some degree of financial disincentive was present, which would also detract from the financial need to work.

The adaptive behavior skills domain found the majority of persons to have social support systems adequate for vocational goals, and a congruence of behavior with rehabilitation goals. The greatest problems occurred in the area of accurate perception of capabilities and limitations, in which none of the persons were seen as functioning at an acceptable range. Judgement was also found to represent a significant problem, with 87 percent reporting some type of problem in this area. Problems with initiative and problem solving ability and failure to demonstrate effective interactions with employers and co-workers were problematic for most persons studied.

Identified strengths. A review of the items under strengths, reveals that the persons being described are seen as having few vocationally relative strengths, with none of the identified areas being rated as a strength or asset in more than 25 percent of the persons. Motivation to succeed and having an exceptionally pleasing personality were the two items scored the highest,

with 25 percent of the respondents being rated as having an asset in this area.

Vocational Adaptivity of Persons Entering Employment

The Vocational Adaptivity Scale (VAS) (Thomas, 1988) was used to rate persons served on employment related skills. VAS ratings were made at the time of a community-based job trial by the work supervisor. Typically, work supervisors had an opportunity to observe clients for at least one to two weeks before making ratings on the VAS. Following the protocol established for use of the VAS, two independent raters provided input, and if differences occurred, the case manager mediated and determined the appropriate rating for each particular area. All participants were rated on demonstrated job search skills, interviewing skills, work related skills, supervisory relations and social adaptive behaviors as prescribed in the Employment Readiness Assessment Manual (Thomas & McCray, 1988). Results are reported on Table 11.

Table 11. Scores from the Vocational Adaptivity Scale (VAS) for Project HIRe Participants

	n	*Mean	Std Dev	Median
Section I - Job Search Skills	23	2.34	9.50	31.00
Section II - Interview Skills	22	2.49	14.16	44.50
Section III - General Work Skills	22	2.01	11.72	56.00
Section IV - Social Adaptive Behaviors	22	2.85	14.07	82.50

* The mean scores listed are grouped by content areas of the VAS. A 5 point Likert scale was used, with 1= unacceptable or poor, 2= marginal, 3= average or adequate, 4= above average and 5= very good or asset.

A Vocational Adaptivity Scale was completed for all persons who entered this project and were included in a vocational assessment and work trial. In total, VAS scores were available on 22 persons. The VAS consists of several parts, which include observations taken during interviews, observations while on a job, which included assessments of social adaptive functioning, interactions with supervisors and peers and general work related skills.

Job Search Skills - A review of Table 11 shows that the majority of all persons rated had significant difficulties in this area. Items dealing with job search knowledge, following through on jobs leads and producing letters and correspondence were particularly problematic to the vast majority of the persons rated. Despite the fact that many of these persons exhibited the apparent potential to conduct an independent job search, the majority of them lacked the cognitive skills to be able to follow through with this endeavor.

Interviewing Skills - Table 11 provides a summary of all persons rated on the

interviewing skills portion of the VAS. Although the clients who were rated fared somewhat better in this area, significant problems were noted in appropriate use of telephone demeanor and language, demonstration of assertive personal approach in the interview, display of general knowledge of the job and company in which employment is being sought, and ability to keep peace and place in the interview. Display of courtesy towards the interviewer was one of the few items in which a majority of the persons functioned quite well, with only 18 percent rated as demonstrating marginal skills or needing improvement.

General Work Skills - The general work skills section of the VAS is divided into those related to general work skills and those related to supervisory relations. Table 10 demonstrates the ratings achieved on the supervisory relations portion of the general work skills assessment. The vast majority of subjects functioned at an adequate level in each of these areas, however nearly a third of the persons rated had difficulties in following work supervisor's instructions accurately, working independent of the supervisor after initial training period, and profiting from instruction or criticism.

Social Adaptive Behavior - In the social adaptive behaviors category, the majority of persons rated had difficulty expressing themselves clearly and efficiently, displaying acceptable expression of emotions, maintaining a realistic opinion of achievements and ability, and displaying ability to being assertive. In this area, many of the difficulties that are exhibited are distributed among the various items depending on the nature of the problems that each individual showed. This phenomena is related to the extreme variability between persons regarding how the traumatic brain injury affects interpersonal relationship skills.

Problems Encountered in Employment

Worker and family perceptions of work problems. Data from both the employee and ratings provided by the family were available on seven persons from the original employment sample twelve weeks after initial employment began and are shown in Figure 2. In each case, the subjects saw themselves as having less problems on the job than family members did. This

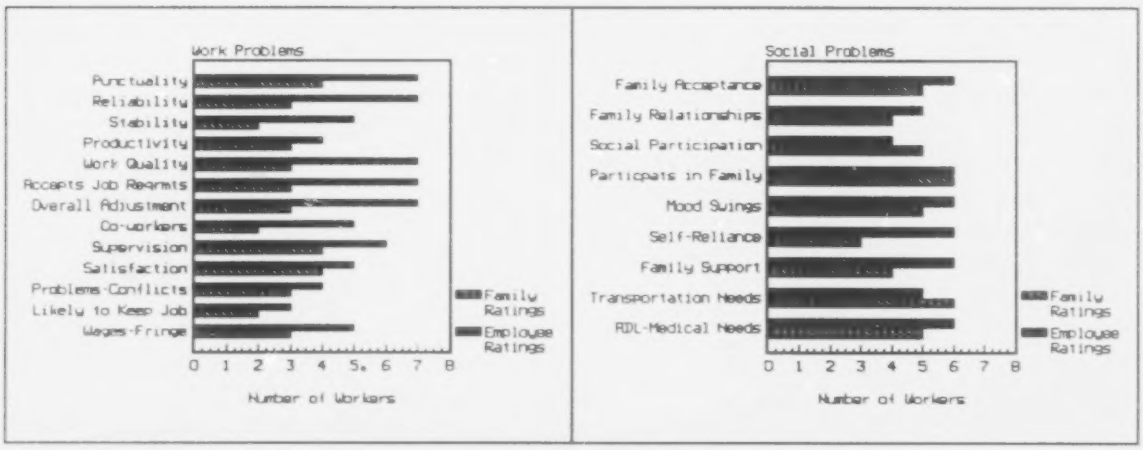

Figure 2. Employee and Family Ratings of Work Problems After 12 Weeks of Employment

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inability to perceive the nature of the work problems turned out to be one of the primary difficulties in adjusting people to work. That is, people were unable to notice that they did encounter difficulties with punctuality, reliability, and stability.

Comparison of initial to later work problems. Figure 3 illustrates the differences between initial ratings of supervisors to ratings completed by the same supervisor twelve weeks into the program. The number of persons fell from 24 to 8, because of attrition. The fact that some persons dropped from the program and supervisors of other workers could not provide follow-up ratings because they had been placed in other jobs. This resulted in a smaller number of follow-up ratings.

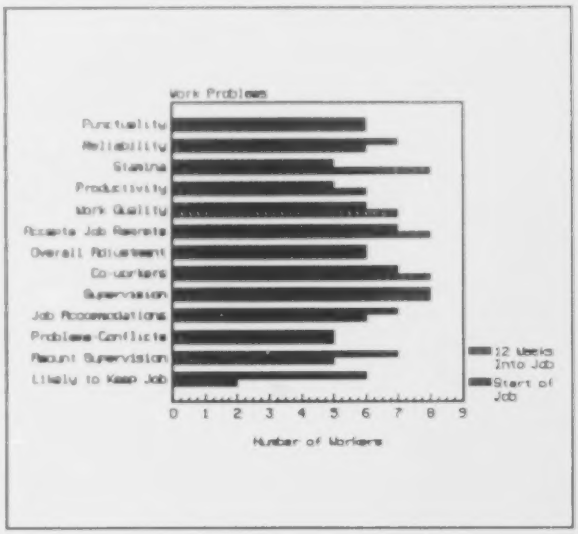

Figure 3. Supervisor Rating of Problems at Start and 12 Weeks Into Employment (N = 8)

At the onset of entry into the project, work supervisors were asked to rate the head injured individual in thirteen areas of functioning deemed important to community-based employment. Each of the areas rated represented an abbreviation of the items included on the Vocational Adaptivity Scale which was completed prior to job placement. Figure 3 illustrates the primary problems identified by supervisors at the onset of community-based employment.

The areas of greatest concern to supervisors involved difficulties with problems and conflicts on the job and productivity, which were experienced by approximately half of all individuals being served. Additional problems which were found in approximately one third or more of the cases included difficulties with overall adjustment to work, work quality, stamina, amount of supervision required and to a lesser degree difficulties with reliability and punctuality. The least identified problem in this sample included the amount of supervision time required after an initial training period. This, perhaps, was one of the least concerns of the supervisors since at the onset of employment, an employment training specialist (transitional job coach) was available for initial job coaching and case coordination. As job coach, responsibilities were transferred to the long-term job coach who typically had less time for intervention, the concern of supervisors and the amount of time they needed to spend with the person increased proportionately to the amount of on-the-job support which was gradually being reduced.

On-the-job and off-the-job support. Data was kept on the amount of on-the-job and off-the-job support provided to persons in this project, and is summarized on Table 12. Generally speaking, employment support services can be characterized as pre-employment support, on-the-job support and off-the-job support. The data for the amount of support services rendered includes each of these categories for the majority of all clients.

Pre-employment support services began when a person was referred into a program, and

case management services and diagnostic and therapeutic services were provided. This included time spent by project staff in providing these direct services to the person. In some cases duplicative counts were included, although this was not a common occurrence. This happened when a person was being evaluated for therapeutic services while at the same time a job development specialist was working in the field to develop a job commensurate with job goals and work skills. It therefore is possible that a person may have had ten, twelve or more hours of support services provided per day with varying amounts of support provided by different staff persons. An attempt was made to differentiate the type of support provided but because this did not happen on a regular basis further analysis of this data was not deemed necessary.

On-the-job supports typically involved transporting them to work, training them on the job, communicating with supervisors and providing telephone consultations to supervisors as necessary. All other support services were considered off-the-job support, such as meeting with families, making arrangements with other therapy or service providers for meetings and follow-up services which were provided at the job site.

Table 12. Forms and Amounts of Supports Used
On-The-Job and Off-The-Job by 14 HIRe Subjects

Forms of Support Provided	Indianhead (n = 3) Percent Days Support Provided	Indianhead (n = 3) Average Per Week	Indianhead (n = 3) Hours Per Day	ABC (n = 11) Percent Days Support Provided	ABC (n = 11) Average Per Week	ABC (n = 11) Hours Per Day	Total (N = 14) Percent Days Support Provided	Total (N = 14) Average Per Week	Total (N = 14) Hours Per Day
Direct On Job Forms of Support									
A. Evaluation and assessment	22.69	5.88	1.41	47.83	8.81	2.65	40.67	8.42	2.45
B. Planning or counseling with worker	18.49	2.80	0.76	33.95	0.87	0.57	29.55	1.03	0.61
C. Behavior management or work adjustment	68.49	2.71	0.62	30.27	16.93	4.02	41.15	10.35	2.41
D. On-site job skills training	15.97	3.02	0.80	17.06	5.67	1.95	16.75	5.08	1.63
E. Monitoring productivity/quality	64.71	4.91	1.56	53.68	7.41	2.51	56.82	6.63	2.21
F. Job accommodation/modification	25.63	3.41	0.95	5.18	1.23	0.52	11.00	2.46	0.80
G. Transportation client to job	16.39	3.17	0.73	4.18	1.25	0.55	7.66	2.11	0.66
H. Employer training or intervention	11.34	2.05	0.76	2.17	0.52	0.44	4.78	1.25	0.66
I. Co-worker training or intervention	13.03	1.25	0.44	1.17	1.92	0.82	4.55	1.39	0.51
J. Other support (e.g., family problem)	0.00	0.00	0.00	0.52	1.56	0.61	0.52	1.56	0.52
Indirect Forms of Support									
A. Job analysis/observation	25.96	0.80	0.24	3.49	1.27	0.76	6.94	1.08	0.46
B. Job development	25.00	1.04	0.32	10.82	1.06	0.63	13.00	1.06	0.54
C. Other on-site observation	22.12	0.48	0.10	2.27	0.54	0.50	5.32	0.52	0.25
D. Interagency consultation	6.73	0.51	0.29	35.60	0.79	0.47	31.17	0.78	0.46
E. Coordination of services	16.35	0.51	0.21	28.62	0.83	0.55	26.74	0.81	0.52
F. Travel time required (Job Coach)	46.15	1.75	0.40	28.80	1.35	0.60	31.46	1.40	0.56
G. Data collection and paperwork	71.15	0.80	0.27	47.99	1.17	0.82	51.40	1.12	0.71
H. Training/staff education/reading	4.81	1.33	0.80	1.57	0.47	0.47	2.07	0.69	0.59
Off Job Forms of Support									
A. Housing and residential assistance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Transportation (client)	15.38	3.25	1.08	1.27	0.79	0.59	2.09	1.41	0.80
C. Health and medical needs	0.00	0.00	0.00	5.54	4.39	2.39	5.22	4.39	2.39
D. Financial management	0.00	0.00	0.00	0.32	1.25	1.25	0.30	1.25	1.25
E. Job-seeking training/assistance	0.00	0.00	0.00	2.22	1.23	1.05	2.09	1.23	1.05
F. Supportive counseling/mental health needs	33.33	2.08	0.48	11.55	1.12	0.85	12.82	1.17	0.79

Table 12 (continued). Forms and Amounts of Supports Used
On-The-Job and Off-The-Job by 14 HIRe Subjects

Forms of Support Provided	Indianhead (n = 3) Percent Days Support Provided	Indianhead (n = 3) Average Per Week	Indianhead (n = 3) Hours Per Day	ABC (n = 11) Percent Days Support Provided	ABC (n = 11) Average Per Week	ABC (n = 11) Hours Per Week	Total (N = 14) Percent Days Support Provided	Total (N = 14) Average Per Day	Total (N = 14) Hours Per Day
Off Job Forms of Support (continued)									
G. Planning with family/advocates/caregiver	2.56	1.00	1.00	4.27	0.67	0.47	4.17	0.69	0.49
H. Recreation and social development	56.41	3.74	3.74	58.39	5.94	1.50	58.27	5.52	1.62
I. Support groups (TBI, AA, divorce, etc)	5.13	2.12	2.12	1.74	1.71	1.09	1.94	1.81	1.25
J. Communication - speech	0.00	0.00	0.00	57.44	4.20	0.93	54.10	4.20	0.93
K. Cognitive rehabilitation organization - note-booking, visual spatial orientation	0.00	0.00	0.00	71.84	5.37	1.18	67.66	5.37	1.18
L. P.T., O.T.	0.00	0.00	0.00	38.61	1.65	0.86	36.36	1.65	0.86
M. Other interventions	0.00	0.00	0.00	2.06	1.83	0.85	1.94	1.83	0.85
Totals for Forms of Support									
Direct On Job Support	97.14	8.74	2.53	61.52	12.36	4.26	68.64	11.45	3.77
Indirect Support	42.45	2.08	0.64	58.95	1.81	0.71	55.58	1.84	0.70
Off Job Support	15.92	3.86	2.57	65.02	10.02	2.96	55.09	9.27	2.94

Employment, Retention, and Earnings Benefits

Table 13 demonstrates the average earnings for each respective individual by site, and also examines the types and settings of each job and the stability of the work. Because of the severity of the disabilities of persons served at the Indianhead site, wages tended to be somewhat lower. Despite the fact that the majority of all persons were involved on scattered supported sites at some point in the project, four months after the project ended, few people maintained competitive/supported employment. This trend was due to the fact that case managers and job coaches were reassigned to other duties due to the withdrawal of project dollars. After loss of individual placements or due to changes in work sites, wages also dropped to the point where nearly half of the people were earning at or below minimum wages.

Table 13. Employment Benefits for Last Job Placement at Replication Sites, 3 Months After Conclusion of Project HIRe

Employment Variables	Indianhead Enterprises	Ability Building Center	Totals
Number Workers	3	10	13
Job /Characteristics			
Average number of jobs	2	2	4
Average weeks of support	9.4	8.2	17.6
Total weeks worked	70	269	339
Total possible weeks worked	73	304	377
Percent Week Worked	95.9	88.5	89.9
Employment Benefits Last Job			
Average hourly rate	2.81	3.29	3.05
Average hours/week	23	19	21
Average weeks worked	15	19	17
Wages Compared to Minimum Wage			
Number Workers Above	2	5	7
Number at or below	1	4	5

1. Figures are based on n's of 3, 11, and 14, respectively, for the two demonstration sites. Persons placed during model development at the pilot site were not included in this table.
2. Minimum wage rates: 1989 - $3.65; after 1990 - $3.80.

Integration Benefits

Table 14 summarizes the extent to which job coaches reported integration opportunities

for 13 individuals. Opportunities for the supported employees to interact with nondisabled persons on the job was available in nearly 77 percent of the cases and off-the-job in 62 percent of the cases. Where opportunities were available on-the-job, they almost universally took place at work (92%) and to a fairly lesser extent during breaks and meals (69%). In 23 percent of the cases, interactions were known to take place outside work and 84 percent of the supported workers made attempts to interact with their co-workers off-the-job. According to job coaches reporting on the 13 supported workers, attempts by supported worker to socialize with their co-workers were not reciprocated. This data represents data collected during the active phase of Project HIRe. Data regarding integration benefits was not available at the 4 month post project follow-up.

Table 14. Opportunities for Integration Among Clients at HIRe Demonstration Sites

Integration Measures	Percentages of Jobs Providing Opportunities Indianhead (n = 3)	ABC (n = 10)	Total (n= 13) Percentages
A. Opportunity for interacting with non-disabled co-workers was available on job	100.0	70.0	76.9
B. Interaction took place on the job	100.0	90.0	92.3
C. Interactions took place during breaks/meals	100.0	60.0	69.2
D. Co-worker assisted person with job interview or networked	33.3	0.0	7.7
E. Opportunity for interacting off job with non-disabled co-workers was available	33.3	70.0	61.5
F. Interactions in social activities took place outside of work	0.0	30.0	23.1
G. Worker made attempts to interact with co-workers	100.0	80.0	84.6
H. Co-worker avoided worker during breaks or social	100.0	100.0	100.0

Average Number of Jobs 2

1. For all measures, except H, an answer of 'Yes' meant opportunity was available or used.
2. Percentages based on 13 subjects.

Clinical Case Studies

The following three case studies reflect the variability among the people served under HIRe. In particular, they indicate the extent to which on- and off-the-job supports are needed on an individual basis. Figures 4 through 6 correspond to these case studies.

Sharon

Identification. Sharon, a 32 year old white, divorced female sustained a closed head

injury. There was reason to believe that the injury which was reported to have occurred during a fall may have resulted from domestic violence.

Although she was not treated in a hospital at the time of the initial injury, left-sided weakness eventually developed. Approximately one month after the trauma, she was diagnosed with an intracranial hemorrhage. In July, some six months later, focal seizures began and she was treated with Dilantin and Tegretol to control them. Sharon had been diagnosed as being diabetic six years earlier but the diabetes was under good medical control. There was also a history of hypertension and depression which go back to the onset of the diabetes, and a history of a suspected neurotrauma from an earlier time.

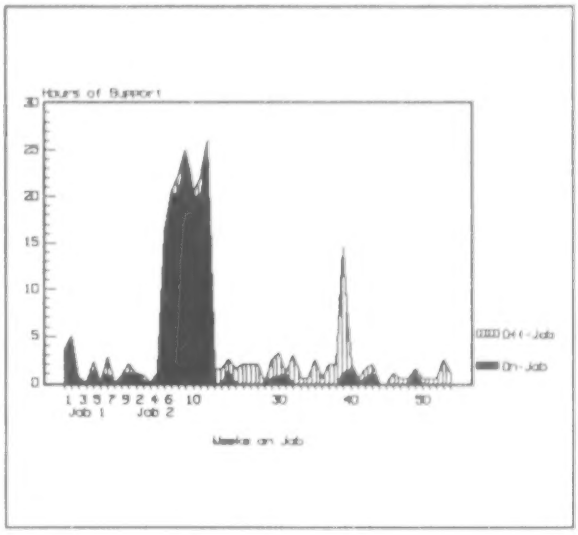

Figure 4. Sharon's Needs for Job Support

Neuropsychological status. Neuropsychological testing found difficulties with visual spatial tasks, and an unusual constellation of behavioral sequelae (she was felt to be right hemisphere language dominant). Testing also revealed significant memory deficits, which were affected to some degree by the depression. Learning efficiency and retention, and speed of mental processing were also reduced. Moderate impairment in visual spatial skills and poor psychosocial adjustment were noted.

Social background. At the time of referral to this project, Sharon was living in an apartment with her boyfriend and her six-year-old son in a predominantly rural area. She had 90 credits towards a nursing degree but since the head injury has not been able to concentrate or remember information adequately enough to return to school. Her goal was to eventually go back to school to complete a degree in respiration therapy.

Residual impairments. From a physical perspective, the left-sided weakness continued, and mild to moderate difficulties with standing, walking, speed problems and gait related difficulties were noted. Balance problems were also present as well as fatigue and endurance difficulties. Grip strength on her right hand was significantly impaired.

Speech and language was marked by mild to moderate auditory processing difficulties and verbosity in day to day conversations. She was also tangential and rambling during conversations. Reading comprehension appeared mildly disturbed and she was depressed and emotionally labile. Some of these problems were felt to be related to psychiatric related problems.

Job placement. Placement was at a department store in a town of approximately 60,000 people within commuting distance of her hometown. She began working as a cashier and

checkout and was later placed stocking shelves because of interpersonal problems and difficulties with work speed.

Job search skills. Job search skills were described as "deficient," with most difficulties noted in producing correspondence, demonstrating a knowledge of the job search process and a lack of accessibility to transportation for the interview. Transportation had to be arranged for interviews and work. Interviewing skills were generally adequate with the exception of problems in explaining sensitive material or gaps in employment history.

General work skills. The most prominent problems involved difficulty with maintaining an adequate level of productivity, attendance problems, and difficulties in solving work related problems in a practical and efficient way. Work stamina was also somewhat of a problem. Frequent complaints of supervisors and co-workers were also reported.

Social adaptive skills. Social adaptive behavior problems included difficulties in demonstrating courtesy to other workers, problems with displaying an acceptable expression of emotion, difficulties in handling minor stress and frustrations on the job, demonstrating mood swings, and boldness in social situations. Lack of sensitivity to the feelings of others and making awkward or out of context remarks were also exhibited. Grooming and hygiene were considered marginal.

Matthew

Identification. Matthew was a 20 year old male at the time that he sustained a brain trauma injury when struck by a tree cut by his father. A severe brain injury resulted with multiple lacerations, contusions and bruises. He was conscious when brought to the hospital, but there was a severe laceration in the occipital area and the skull in this area was exposed. A CT scan performed at the time revealed a contusion to the left frontal lobe and fracture of the occipital bone. Surgery was required to clean and debride the area. A subsequent CT scan showed a developing intracerebral hematoma. Slow and gradual progress was made over several weeks, but he unable to speak, partially because of the fact that he had a ng tube installed which precluded him from speaking. He was impulsive, disoriented and aggressive when he emerged from coma, and was treated with Halodol to control these behaviors.

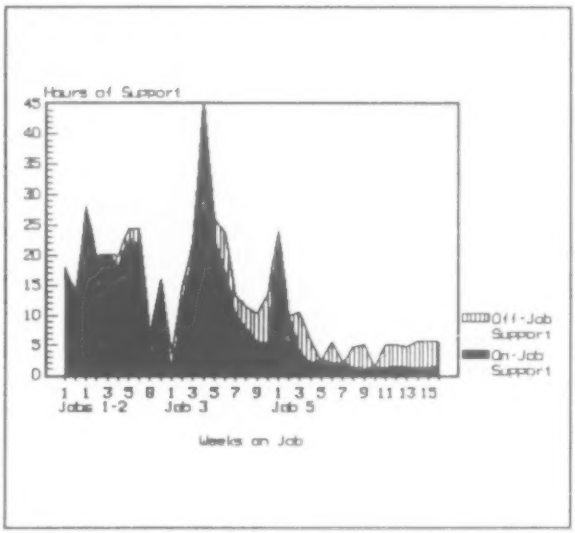

Figure 5. Matthew's Needs for Job Support

Neuropsychological status. Neuropsychological test results suggested that his intelligence was in the low average to borderline range. His memory was significantly impaired although his visual memory was somewhat better than auditory memory. Memory for things

that he had to do in the future was very poor. He demonstrated an inability, even after cueing, to remember to do things such as keep appointments and follow work instructions. Written lists and color coded messages were used but met with failure since he did not demonstrate the cognitive flexibility to use these compensatory strategies. Complex problem solving was significantly impaired, and significant difficulties with executive functions of planning, executing behavior and using feedback to alter task performance was noted.

Language skills overtly appeared as quite functional, although significant memory difficulties were exhibited. Matthew would frequently "get lost in conversation" and he was also unable to abstract information, especially if instructions were longer than a sentence or two. Sensory-perceptual-motor skills were his general forte. He demonstrated fairly good dexterity and coordination and he was very strong which was a major vocational asset. Math skills were functional, and on a standard achievement test he achieved an 8.4 grade level of achievement. A similar 8.5 grade level in word recognition and comprehension was also noted, but if there was any delay from the time that he read information until he needed to freely recall the information, his recollection of what he read diminished to practically no recall at all, even with cueing.

Social background. Returning home, following six weeks of hospitalization, Matthew developed difficulties with aggressiveness. He was therefore transferred to an intermediate care rehabilitation center for six months. Because of continued aggressiveness, he was hospitalized in a state hospital for four months. After returning home he was eventually referred to Indianhead Enterprises, Inc., a vocational rehabilitation facility.

Residual impairments. A review of his history shows that Matthew was an above average student in high school and an outstanding athlete. He had been awarded a football scholarship, and had been doing well in college. Since his injury, Matthew demonstrated profound memory problems and had difficulty performing any tasks which involved a memory component. He liked to do lawn mowing and physical labor and because of his physical stature was able to be employed in this capacity in the rehabilitation center and subsequently in a supported worksite. He lived at home with his parents on the family farm at the time of referral.

Some behaviors that were exhibited at referral to Project HIRe included his desire to compulsively collect empty aluminum cans, and to wander off the job looking for stores to buy food and soft drinks. If he had access to any money, he would spend all of it on food and literally gorge himself. He was also known to work perseveratively, and if left to trim grass along a sidewalk (as he did on occasion), he would continue down the road and out of town if he had the opportunity to do so.

Job placement. Several placements occurred during the course of this study. He began working as a sheltered employee, and was placed on several individual supported worksites as well as with a mobile work crew which maintained highway rest areas in the vicinity.

Job search skills. Job seeking behaviors were judged to be poor and Matthew was totally incapable of initiating an independent job search. Similarly, interviewing skills were poor and he was unable to interview independently. Matthew had to interview with employers with

the help of his job coach because he was unable to stay on track during the course of the interview, and often was unable to answer simple questions about his background.

General work skills. General work skills were also limited. Difficulty in following shop rules and demonstrating adequate safety procedures were primary concerns. Knowledge of the job, remembering work instruction, and demonstrating a practical approach to problem solving were also significant problems. Difficulties with reading memos and taking job instructions in written format was a problem, not because he could not read but because he was unable to carry out or execute such commands. Matthew would forget to review his written instructions, or would simply get sidetracked by other things that he would find more interesting. He required almost constant supervision, and unless the job instructions were concrete he required a job coach with him most of the time during initial instruction periods. After he was able to break into the routine of a job, he demonstrated better vocational adaptability.

Social adaptive skills. Social adaptive behaviors also were problematic. He had difficulty expressing himself, and exhibited mood swings and inappropriate displays of emotion. When given directions he would often repeat such words as "for sure," "yes, you bet" but when instructions were verified it was often found that he had no idea of what it was that he had been asked to do. Grooming and hygiene were also a problem that needed constant monitoring.

Gene

Identification. Gene, a 29-year-old male referred to Project HIRe, was injured at the age of 28. At the time of his accident he was a roofer. He fell from a roof at work and sustained an open head injury. A coma period of approximately 12 days resulted. Because of a penetrating brain injury, surgical intervention and debridement procedures were required. He developed a seizure disorder for which he was treated with Dilantin and Tegretol.

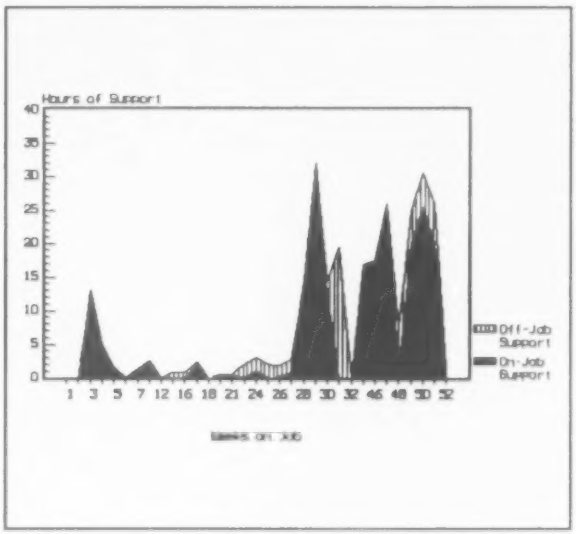

Figure 6. Gene's Needs for Job Supports

Neuropsychological status. Neuropsychological testing conducted in 1988 indicated mild to moderate brain dysfunction. Marked improvements in orientation, attention, concentration, visual memory, and planning were reported. Intellectual ability at that time was in borderline range with a relative strength in visual spatial reasoning. Memory functions were also in the borderline range. Immediate and delayed recall for verbal information was low average and represented a relative strength. Reading and math were significantly impaired and were felt to be related in part to poor academic achievement premorbidly. Reading and math skills were judged to be inadequate for functional independent living.

Social background. At the time of entry into Project HIRe, Gene was living in a group home for persons with TBI and substance abuse problems. This was a transitional living arrangement, with the intent that he would return to his home town in a small rural area to live with his parents. Although he attended high school through most of the 12th grade, he did not graduate.

Residual impairments. Gene's injury was described as a "right parietal, open, depressed skull fracture." In addition, there were multiple rib fractures and a right upper extremity shoulder injurie. After stabilization in the hospital, significant problems were apparent. Anxiety, agitation, indifference, lack of initiative, dysarthria, and aphasia were noted. Moderate problems with irritability and aggression in social interactions were documented. A cervical spine and lower back injury was also noted.

Speech was marked by dysarthria, and auditory processing speed was slow. Gene had difficulties in abstraction which further slowed language processing. Problems in ambulation were noted, and difficulties with balance and gait were reported.

Job placement. Work began at a not-for-profit rehabilitation facility with transition to a community-based job trial and a supported employment placement at a rental depot. Data for this study was obtained at the rental depot site until the time that he was eventually terminated because of poor attendance.

Job search skills. Assessment of job search skills showed significant problems. The most prominent of these difficulties included lack of knowledge as to how to go about looking for a job, inability to recall names of references, inability to describe his disability in a nonstigmatizing manner, and problems in independently searching for work. To a lesser degree, some problems were also exhibited in meeting with employers. Intensive assistance was needed in order to identify jobs in the community for eventual placement.

Problems also existed insofar as interviewing skills. He was unable to fill out applications independently because of his poor writing and comprehension skills, and was very nervous and irritable during the course of interviews. Gene also failed to demonstrate many of the courtesies that are expected in the give and take of an interview, was unable to explain his work history, and showed little knowledge of jobs for which he was applying. His personal demeanor and interactions were a further deterrent to successful job seeking.

General work skills. General work skills were deemed as generally adequate after job placement. Work problems that were encountered included difficulties remembering work directions, problem solving on-the-job problems, and inability to assume new responsibilities with changes in work assignment. If job duties were changed, extensive training was necessary until the new responsibilities became routine.

Social adaptive skills. Social adaptive behaviors were appropriate if he was familiar with the environment and were typically not a problem. At times Gene would demonstrate swings in mood which made others around him uncomfortable, although he was not intrusive or socially inappropriate for the most part.

Summary of Benefits Achieved Under the HIRe Model in Rural Settings

Twenty-seven persons were served in some capacity by Project HIRe. Of these, 19 were male and 8 were female. The average age at the referral of 25, although there was considerable variation in age (18 to 51). All persons in the sample were white, a cultural phenomena of midwest rural areas. Marital status for most persons, remained approximately the same as before the injury. The majority (55.5%) had completed high school or a general education equivalency diploma prior to their injury, while the remainder completed their GED or high school diploma after their injury. Nearly 15 percent had been involved in vocational and technical training and two individuals attended college after their injury.

1. **Nature of head injuries**. The majority of persons studied had a closed head injury. Seven out of 13 also had a skull fracture as a result of the injury, suggesting the relative severity of the blow to the head that was sustained. Also, the majority of the injuries were sustained in motor vehicle accidents, with one-third of all known cases related to alcohol use. Family members reported average coma length of 32 days and average number of days in amnesia at 16 (both with wide variations). Post-traumatic amnesia period is often reported in the literature as being two to three times that of the coma period.

2. **Severity of disability**. At all three of the sites involved in Project HIRe (including the original pilot site), persons with relatively minor traumatic brain injury as well as severe and catastrophic levels of brain injury were referred to programs. By and large, HIRe subjects were classified as having significant and severe disabilities based on the nature of the initial brain injuries and the types of problems exhibited following their injury. Without support of job coaches, case managers and client advocates, these people would probably not have had the opportunity to access employment in community-based situations.

3. **Functional problems identified at referral**. Data in six functional problems areas were gathered from family members at the time of referral:

   a. Physical. Balance was the most common physical problem, followed by difficulties with walking and lifting, yet none of the subjects were reported to have spinal cord injuries.

   b. Sensory motor and medical conditions. Seventy-eight percent reported difficulty with coordination, over a third reported having seizures, and the majority had a history of seizures, but all of them were either well controlled or in remission at the time of placement in competitive employment. Well controlled seizures were defined as being relatively low incidence with adequate pre-ictal warning.

   c. Cognitive. Memory difficulties were reported for nearly 86 percent of the total sample. Difficulties in visual spatial skills and problems with

executive functions including defining and carrying out goals were exhibited by nearly three quarters of the sample.

d. Emotional and behavioral. Emotional and behavioral problems were also common, with three quarters of the persons reporting feelings of frustration, 60 percent reporting depression, over half of them reporting anxiety and anger, and 17.4 percent reported problems with alcohol or chemical abuse. Few indicated difficulty with any psychotic symptoms such as paranoid behavior or hallucinations by way of their history or present status.

e. Social adjustment. Social adjustment problems were also commonly reported. Approximately half of all persons were reported to have difficulties with poor judgement and awkwardness in social situations. Approximately a third of the population were described as being irritable, impulsive and feeling as though they were being rejected by others. Only two of the subjects were found to be aggressive and assaultive toward others.

f. Mobility. While they did not have significant mobility limitations (e.g., 3.7 percent requiring a wheel chair, 11.1 percent required crutches, walkers or cane), most persons walked independently. Many of these people (43.5%) had problems walking due to dizziness, fatigue and coordination problems.

4. **Previous employment and earnings**. Prior to injury, 47.8 percent were not employed and at referral to HIRe 48 percent were unemployed. Although 39 percent had been competitively employed prior to injury, only 21.7 percent were employed at referral and many of these individuals continued to exhibit work problems. Of persons employed at referral, 83 percent were working part-time, while 67 percent of those employed prior to the injury were working full-time. Nearly three quarters of the family members reported that they expected a substantial reduction in short-term earnings, and approximately two-thirds felt there would be a deleterious effects on long-term earning potential.

5. **Vocational adaptivity**. The majority of persons studied had significant difficulties with job search skills. Items dealing with job search knowledge, following through on jobs leads and producing letters and correspondence were particularly problematic to the vast majority of the persons rated. Despite the fact that many of these persons exhibited the potential to conduct an independent job search, the majority lacked the (executive) skills to follow through.

6. **Employment outcomes at the Wisconsin site**. Three individuals were served in community-based employment at the Indianhead Enterprises site. Community-based employment program funding in the area served by this

agency was based on a slot allocation system, and only three slots were allocated for survivors of traumatic brain injury. The persons served had disabilities so severe that they required additional job coach and support services that went beyond what is traditionally provided to community-based employment clients in this facility. It was typical for the employment training specialist to work intensively with one individual, and then to fade to a maintenance job coach while working with another referral. However, because of the problems encountered, the employment training specialist often needed to spend additional time with a client that was faded into maintenance status if various aspects of the job changed.

7. **Employment outcomes at the Minnesota site**. Fourteen persons were served in community-based employment through Ability Building Center. This facility was able to work with larger numbers due to having an existing community-based employment program in place to tie into the HIRe Model.

8. **Employability of individuals**. Employability appeared to be not only a function of severity of disability, but the stability of the disability as well. It was not necessarily the degree of physical disablement that precluded people from working as much as factors such as personal insight into the nature of their problems, extent of interpersonal work problems, and general social adaptive behavior difficulties. People who were less predictable in their behavior tended to be the ones that had the most problems. Persons with wide mood swings and styles of interactions with persons which seemed to "catch their employers off guard" were more likely to exhibit work related problems and were subsequently terminated because of these behaviors.

9. **Earnings from community-based employment**. Both facilities reported placing people on jobs that were below the minimum wage. Indianhead Enterprises placed one person below minimum wage, and the Ability Building Center placed four below minimum wage. Those who were placed below the minimum wage tended to be individuals who were in training or apprenticeship programs in transitional work sites. The difficulties encountered in placing people at a competitive wage rate were related in part to the nature and severity of the disabilities of these individuals.

10. **Stability of community-based employment**. Portions of the dollars provided by HIRe were used to partially support an employment training specialist's salary at both sites. At Indianhead Enterprises the money was used entirely for this purpose. The employment specialist functioned in much the same manner at both sites, providing much off-job as well as on-job support. Once funding through HIRe ran out, the on-site support was no longer able to be carried out at the same level of intensity at either facility. Retention of community-based employment among the individuals drastically declined, presumably due to the reduction of systemic supports.

11. **Impacts of community-based employment in rural settings**. This project

demonstrated that when adequate on-the-job and off-the-job support, along with job placement are provided, persons with severe and significant residual impairments and functional limitations as the result of a traumatic brain injury can be employed in community-based settings. In addition, other individuals who are not able to be competitively employed could be placed on community-based jobs at less than minimum wage, or in volunteer situations which may enhance their probability of community integration and independence in social and vocational functioning at a later date. Even though services may not be available in one central location in rural areas, if sufficient up-front case coordination is provided (e.g, assessments, therapies, linkages to services providers), support services in local communities may meet the employment related needs of many of these persons.

12. **Reasons for failure**. Persons who tended to fail on the job were those who developed psychiatric related difficulties, medical emergencies. or those who did not demonstrate a motivation to continue. Since these traits tend to eliminate persons from community-based employment situations in urban settings as well, these were not particularly seen as significant barrier to employment caused by the rural environment. A major barrier to providing effective employment services in rural areas was the establishment of a long-term funding stream adequate to provide services necessary for sustaining the person on the job. This included the assistance of job coaches, independent living care-givers, persons to perform emergency and intervention services and services connected with crisis intervention.

13. **Problems in rural service delivery to TBI services**. The relatively low incidence of traumatic brain injury in rural areas due to a smaller population base represents a barrier to the provision of community-based services. Service providers tend to be less well trained, with less experience in working with large numbers of persons with traumatic brain injury, and therefore have less experiences to draw from in the provision of community-based services. Advocates for TBI survivors also face competition for dollars to finance programs for persons without the insurance coverage or available cash to independently fund programs. For this reason it is common to find persons with TBI working in programs serving other disabilities.

14. **Characteristics of persons with traumatic brain injury**. Persons served in Project HIRe were found to have multiple physical disabilities and resulting functional limitations in addition to the social, emotional and cognitive problems caused by the traumatic brain injury.

    a. Primary difficulties tended to be in the areas of attention and concentration, memory, strength and coordination, stamina, psychosocial and interpersonal skills problems, limitations insofar as cognitive flexibility and insight into the nature of current problems all of which affected integration into stable employment.

b. Secondary emotional problems resulting from the aggregate of limitations further exaggerates problems in the work-place and created additional problems. This affected how and whether the individual retains employment and achieved satisfying integration with other workers.

15. **Unpredictable outcomes.** In general, all clients who were willing to participate in this study and who were accepted using initial intake criteria were provided services. In some cases, the services ended after the intake, initial assessment, and referral to other programs or services. In other cases, referrals went all the way through the project model and through closure into competitive employment. It was difficult to determine from initial impressions whether an individual would be successful in competitive or community-based employment, as well as the types of supports they might require. Community-based job trials were therefore seen as a critical process for analyzing vocational assets and potential as well as determining what types of strategies to employ to offset work related barriers or limitations imposed by their disability.

    Some surprising results occurred during this project. For example, one individual who appeared to be quite adaptive and appropriate but who had problems with alcohol and drug abuse and interpersonal relationship problems required a great deal of intervention, employment preparation and job coaching time as he switched from one community-based employment position to the next. Another individual, who appeared to be quite severely disabled both from a physical and cognitive point of view was able to be placed in competitive employment with limited supports necessary after the placement and adjustment to the work routine. These experiences stress the necessity of both risk taking and assuring that mechanisms are in place to accommodate immediate re-entry into a program. First access to a job is just that, the first of many attempts, which is not unlike what may be expected for any person searching for work.

Variables Limiting Quality of Rural Community-Based Employment

In previous reports on HIRe, emphasis was placed on how moderating factors endemic to the individual and their disability can affect progress in rehabilitation and community-based employment. Findings from project HIRe suggest that certain environmental factors may serve as moderator variables affecting and complicating the rehabilitation of these individuals, especially in rural community-based settings. Among these variables, the following were felt to be of critical importance.

1. **Pre-existing and concomitant factors**. Persons with pre-existing conditions of alcohol and chemical abuse, history of physical or sexual abuse; individuals who have concomitant psychiatric problems such as hallucinations, explosive disorders, or paranoid related behavior patterns; and persons who demonstrate patterns of conduct related to sociopathic tendencies demonstrate greater difficulty in integration both in the work force and in

their social adaptive behaviors in the community. Persons with these types of behaviors and characteristics are commonly referred to vocational rehabilitation through community mental health workers.

2. **Conditional limitations**. Conditional limitations include difficulties that are only indirectly related to traumatic brain injury. Those identified as specifically problematic in rural areas include problems with availability of funding for programs of long-term support in community-based employment; difficult conditions which have to be met to be eligible for funding and services (i.e. disability and monetary requirements, waiting lists, copayments, etc); staff who lack training and understanding of the difficulties associated with a traumatic brain injury; and limited availability of long-term follow-up and community supports.

3. **Quality of information for effective planning**. Information obtained on neuropsychological and medical aspects of functioning is typically not well understood by rehabilitation professionals, even those who are designated as being the primary liaisons between the vocational and medical or neuropsychological consultants. Some studies suggest that while case managers can identify primary characteristics of their clientele they are not able to relate behavioral characteristics such as impulsiveness, executive functioning problems, and reduction in memory capacity to the neuropsychological information available in the case file.

4. **Typical traumatic brain injury referral**. A "typical brain injury referral" to community-based employment programs is a misnomer. There are strong correlations between the severity of the injury, length of coma, length of post-traumatic amnesia period, and the extent of cognitive and physical impairments. However, these impairments, do not seem to predict either the extent or type of needed support or the likelihood of success in employment on a case specific basis.

5. **Initial screening of referrals**. The suggested way to screen referrals for community re-entry programs is to initiate a comprehensive case review, documenting available information, and gathering data prior to the time that planning is completed. Diagnostic information too frequently is not used in case planning because it is not understandable in relation to vocational functioning. As a result, planning and case management often proceed through a redundant evaluation stage or proceed with limited information regarding the impacts of brain injury in the individual case. For example, one referral to Project HIRe had three separate neuropsychological evaluations done in the six months prior to referral and since these evaluations were not available for review yet another neuropsychological evaluation was requested by his county manager.

6. **Type of injury and subsequent adjustment**. There seems to be an interaction between the initial type of brain injury and postinjury onset of

certain adjustment related problems. Frequently at two to three years post-injury the realization occurs to the injured individual that they have ongoing and continuous limitations. Complicating problems of anxiety, depression, and affective disorders begin to appear, requiring additional intervention in the form of supportive counseling and at times medication treatment and sometimes change in jobs or vocational goals.

7. **Greater difficulties for rural rehabilitation**. Implementation of a community-based employment program for traumatic brain injury survivors in rural areas may continue to be a considerable problem in the future. Despite the evolution of the field in general, when rehabilitation programs are provided in rural areas, "being rural" adds a unique set of barriers which must be dealt with. Some of the problems identified in this project include the following:

   a. Personnel. Availability of personnel with knowledge of brain injury and of rehabilitation approaches appropriate with brain injury survivors is especially limited and represents one of the greatest barriers to rural rehabilitation.

   b. Travel time. Persons with traumatic brain injury in community-based employment may still have significant needs for specific rehabilitation services. Rarely are such services convenient to their work and because significant amounts of time are spent in travel to obtain services, the time available for them to work is often quite limited.

   c. Appropriate jobs. Brain injury often requires considerable flexibility and selectivity in job placement in order to match people with jobs that are appropriate. However, there are both fewer employment opportunities available and a limited variety of job options in rural areas. Many persons may be eliminated from the labor market in a rural area because of such limited opportunities to match individual needs with jobs or they may face extended unemployment when they are between jobs.

   d. Decentralized arrangements. The relatively low incidence of the disability across sparsely populated geographic areas usually means that qualified medical and vocational resources are of limited availability. The availability of support groups and advocacy organizations to promote increased service opportunities provide an additional disadvantage.

Recommendations on Developing Community-Based Models

Project HIRe was, in many ways, an experiment on how to devise, implement, and sustain a community-based employment practice in rural settings. While the project provided

important services needed in the area, perhaps some of its most valuable outcomes are in terms confirmation of findings of others working in supported and community-based models development. Several observations and suggestions were derived by this experience:

1. **Critical linkages**. Certain critical linkages need to be established before a developing program is implemented. Setting up such programs requires considerable time and resources. These critical linkages include linkages with (a) other programs for traumatic brain injury survivors, (b) state vocational rehabilitation agency, county or municipal funding agents for long-term funding, (c) state developmental disabilities or mental health agencies which may co-fund existing programs, (d) mental health clinics and inpatient psychiatric settings which provide ancillary services, (e) alcohol and chemical dependency programs, (f) public schools which provide transitional employment programs, and (g) vocational technical school training programs for remedial education and skill training.

2. **Inclusion of constituents in planning**. Critical constituencies need to be involved in planning of programs and services. Parental support groups, client advocacy groups, and survivor groups need to be included in the planning, execution, and program evaluation at all levels of program involvement. Advocates and survivors should include persons from all organizations identified as crucial. These constituencies must also include early involvement of business and industry and local and state political contacts to insure the program's feasibility and continuance.

3. **Established long-term funding**. Methods of providing long-term funding of employment supports must be readily available. One of the greatest problems in providing services to this population arose from the mechanisms of long-term support. Once these funding mechanisms were able to be established, provision of community-based rehabilitation services became much easier. Without them, employment in community-settings need to be time limited and transitional in nature. One consideration for new programs is to develop a two phased program with a common intake, assessment, and job trial phase. For those requiring only transitional or time limited services, the full range of long-term services may not be necessary. In this method, the expensive long-term support services will be limited to those that require that level of intensity in their service arrangements. It is important to note that the cost of placing people in group employment settings was less than at scattered sites. For this reason, when the modest additional funding made available through the resources of Project HIRe were no longer available, many individuals could only be maintained at group worksites which tended to pay less, but which were more economical to operate.

4. **Support groups**. A support group which provides persons placed in community-based employment situations to explore and process reasons for successes and failure appears essential. This peer group process should meet regularly (e.g., weekly) and should be planned into the program. This

process can augment the need for professionals to work directly with individuals on their problems. As necessary, individual and group therapy will also need to be available.

5. **Range of disabilities**. Programs serving traumatic brain injury survivors in community-based settings must be prepared to deal with a wide range of severity within the client referrals they receive. Models are needed which work with persons with mild, moderate, as well as severe disabilities. The previously mentioned transitional versus long-term support dichotomy is but one example of what may be desirable and workable in a given location.

6. **Models for moderate severity of disability**. Consideration should be given to providing services to individuals with mild residual impairments secondary to traumatic brain injury. Persons with mild residual impairments often encounter problems in the early weeks or months following a brain trauma which require less extensive services, but if not addressed, may develop into greater interpersonal and emotional problems.

7. **Program criteria**. Clear intake and exit criteria must be established to determine when and whether individuals will be served, as well as to aid in deciding whether to make referrals to other programs.

8. **Use of rehabilitation facilities**. Private-not-for-profit vocational rehabilitation facilities appear to be appropriate for offering community-based programs for traumatic brain injury survivors. Despite the reluctance of many people to enter rehabilitation facility programs, rehabilitation facilities appear to be a viable coordination mechanism for the following reasons:

   a. Experience exists in regard to providing vocational related services in community-based settings;

   b. Capacity for providing replacement workers in the event that a supported employee is not able to work is often readily available;

   c. Employment and support networks are already in place;

   d. Availability of staff trained in relevant vocational disciplines (e.g., counseling, rehabilitation engineering, employment services, worksite supervision);

   e. Accessibility to job seeking skills training and emergency crisis intervention services;

   f. Established linkages and mechanisms for accessing critical constituencies identified above (the "employment network") already exist.

9. **Factors essential for success**. Community-based programs for traumatic

brain injury survivors are more likely to be successful if both existing supported programs are in place and if staff are trained and experienced in how to provide work-related services in community-based settings, particularly with individuals with head injury.

10. **Model development**. The Project HIRe model developed under this demonstration project invested considerable effort in defining the variables to consider in providing such services. These efforts appeared to make a major contribution to an emerging field insofar as the advancement of knowledge through collaborative research and information dissemination, the collection of similar data at multiple research sites, and the publication of information in the form of several types of multimedia presentations and publications. Due to the effort necessary to develop and pilot test this initial demonstration model, it is suggested that long-term prospective research studies be conducted with the instrumentation developed and validated as part of this process.

11. **Adequate training**. While funding community-based employment service positions and the amount of support services available are important variables, the lack of adequate training of rural personnel in the consequences and treatment of brain trauma and limited experience of most rural providers compounds the problems faced by consumers and professionals in rural service delivery. In order to address this issue, college curricula in all related areas (e.g., vocational rehabilitation, psychology, education) need to incorporate brain injury theory and applications into existing programs. Furthermore, readily available home study programs focused upon skills needed by family members and first line workers such as work experiences and job coaches needs to be made available to those who need these resources.

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APPENDIX A

Instruments for Case Management

Family Interview and Background
Information Questionnaire of TBI Survivors

Vocational Adaptivity Scale

The Physical Variables Profile

The Social-Emotional Variables Profile

The Neuropsychological Variable Profile

Functional Assessment Inventory

Program Path Outline

The instruments contained in Appendix A are the versions of the instruments as revised after completion of the project. Information on current versions may be obtained by writing Dr. Dale Thomas at the Research and Training Center or calling (715) 232-1351.

Family Interview and Background Information Questionnaire of TBI Survivors

Copyright 1991, Research and Training Center

Dale F. Thomas, Ph.D.
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Research and Training Center
University of Wisconsin-Stout

The Family Interview and Background Information Questionnaire of TBI Survivors was originally developed in 1985 as a means of gathering a uniform database of information on personal, demographic and accident information. The information accumulated in this questionnaire is not intended to take the place of diagnostic or evaluative reports which may more accurately detail background or injury data. The purpose of this questionnaire is to obtain the opinion of the TBI survivor and concerned others for initial planning purposes.

Sources of Background Information

Hospital or clinic where emergency or acute medical services were provided.

(Name)	(Name)
(Facility)	(Facility)
(Address)	(Address)
(City/State/Zip)	(City/State/Zip)

Secondary or tertiary treatment or rehabilitation hospital.

(Name)	(Name)
(Facility)	(Facility)
(Address)	(Address)
(City/State/Zip)	(City/State/Zip)

Facility or clinic providing postacute rehabilitation or neurobehavioral services.

(Name)	(Name)
(Facility)	(Facility)
(Address)	(Address)
(City/State/Zip)	(City/State/Zip)

List names and addresses where additional information may be available such as high school, technical school or college, state vocational rehabilitation agency or private rehabilitation facility.

Case #: _____ Revised 12/19/91

Family Interview and Background Information Questionnaire of TBI Survivors

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Part I

Instructions: This questionnaire may be completed by the head injury survivor or by a friend, family member or person well acquainted with the head injured person. Please answer all of the questions as accurately as possible. Make an attempt to provide the most reliable information that you can. Leave any items blank that you need help with, and someone will explain what is needed. The information on this form will be discussed during a follow-up interview.

Name of head injured person: _____

Person completing form: _____

If you are completing this questionnaire on behalf of a person with a brain injury, what is your relationship to that person? (Check one)

_____ Spouse
_____ Parent
_____ Sibling
_____ Child
_____ Other _____

A. **Personal Information**

1. Gender: _____ Male _____ Female
2. Current age: _____
3. Date of injury: _____/_____/_____ (Month/Day/Year)
4. Age at injury: _____ years old
5. Marital Status: (Check one in each column)

Prior to Injury	Currently
_____ Single	_____ Single
_____ Married	_____ Married
_____ Separated	_____ Separated
_____ Divorced	_____ Divorced
_____ Widowed	_____ Widowed
_____ Living together	_____ Living together

6. Ethnic background:

_____ Black	_____ Asian
_____ Hispanic	_____ Native American
_____ White	_____ Other

B. **Education**

7. Education completed: (Check all that apply in each column)

	Prior to Injury	Since Injury
Regular grade school classes	_____	_____
Special education grade school	_____	_____
Regular high school	_____	_____
Special education high school	_____	_____
College	_____	_____
Vocational/Technical training	_____	_____

8. Early developmental history and educational history.

Did this person have a history of prenatal or developmental problems, hyperactivity, learning problems or adjustment problems during their childhood? ____ Yes ____ No
If yes, complete the following. If no, skip to Section C - Living Arrangement.

<u>During pregnancy</u>, did this person's mother experience any of the following: (Check all that apply and explain)

_____ Alcohol use (list amount and frequency if known)

_____ Prescription or nonprescription chemical use (list amount and circumstances)

_____ Serious illness or injury

_____ Premature or difficult delivery

After birth, were any of the following problems encountered? (Please explain)

_____ Emergency surgical or medical intervention
_____ Infections, fevers or diseases requiring hospital treatment
_____ Seizures

Age entered school _____

Were any grades failed or repeated? ___ Yes ___ No. If yes, explain circumstances.

Were any special instructional services needed such as: (Check all that were needed)

____ Early childhood stimulation for developmental delays
____ Special education due to emotional or behavioral disability
____ Remedial education
____ Learning disability class or instruction
____ Special education due to slow learning
____ Serious illness or injury which necessitated extensive absence from school
____ Speech or language therapy for language problems
____ Visual or hearing problems (specify)
____ Treatment for attention deficit hyperactivity disorder (ADHD) using a stimulant drug such as Ritalin)
____ Psychiatric or psychological treatment (specify if in or outpatient treatment was received and if treatment included medication)
____ Family counseling or therapy
____ Out of home placements for living purposes (briefly explain)

Was any childhood trauma experienced? (Check all that apply and explain briefly)

____ Head trauma
____ Abuse or neglect (physical, sexual or psychological)
____ Alcohol or chemical abuse or dependence

C. **Living Arrangement**

9. Check the box that best describes the living situation of the person being described: (Check only one in each column)

	Prior to Injury	Currently
Independent:		
At home with family	_____	_____
Living with others	_____	_____
Living alone	_____	_____
With Supervision:		
At home but supervised by family	_____	_____
Community group residence	_____	_____
Supervised apartment	_____	_____
Under Skilled Care:		
Hospital	_____	_____
Nursing home	_____	_____
Residential rehabilitation hospital or facility	_____	_____

Other (specify) _____

_____

10. Is the current living arrangement appropriate? (Check one)

_____ Yes Comments:
_____ No
_____ Unsure

11. Who is responsible for primary care? (Check one)

_____ Self
_____ Parent
_____ Son/Daughter
_____ Spouse
_____ Other (specify) _____
_____ Attendant
_____ Friend
_____ Facility (hospital, nursing home, etc.)

D. **Sources of Financial Support**

12. Examine the list below and check all current sources of income.

_____ No source of income is is received
_____ Self-Income
_____ Savings
_____ Workers' Compensation Benefits
_____ Pension or Retirement Funds
_____ Litigation Settlement
_____ Social Security Disability Insurance (SSDI)
_____ Public Assistance or Aid to Families with Dependent Children (AFDC)
_____ Supplemental Security Income (SSI)
_____ Veteran's Benefits
_____ Unemployment Compensation
_____ Other (please explain)
_____

If another person handles funds, list name, address and phone number as well as relationship (e.g., parent, guardian, attorney, etc.).

_____ (Name)
_____ (Address)
_____ (Phone)
_____ (Relationship)

If this person is not old enough to authorize for a release of information or if this person has been judged to be incompetent or unable to manage their personal and financial affairs, please explain circumstances and identify who is responsible.

E. **Employment**

13. Employment Status: (Check one item under the "Prior to Injury" and one item under the "Currently" column)

	Prior to Injury	Currently
Not employed	_____	_____
Sheltered Employment:		
Day Activity Center (work is not part of program)	_____	_____
Work Activity Center (work is a part of program but wages are usually less than $1.00/hour)	_____	_____
Sheltered Employment (work is major emphasis, but wages are less than minimum wage)	_____	_____
Community Based Employment:		
Supported Employment (work is community-based but a job coach or support worker provides vocational assistance on or off the job the job	_____	_____
Paid by Government Funds (JTPA or similar at minimum wage or better but government subsidized)	_____	_____
Independent Competitive Employment with at least minimum wage and not subsidized by government	_____	_____
Self-employed	_____	_____
Homemaker	_____	_____

14. The work or activity described above is (was) considered:

Full time	_____	_____
Part time	_____	_____
List number of hours worked if known	_____	_____

15. What potential effects do you anticipate the brain injury will have or has had on short term earning potential (within 6 months to 2 years)?

_____ No Effect
_____ Mild Reduction
_____ Substantial Reduction
_____ Severe Reduction

What potential effects do you anticipate the brain injury will have or has had on long-term earning potential? (Check one)

_____ No Effect
_____ Mild Reduction
_____ Substantial Reduction
_____ Severe Reduction

16. What is your opinion of the probability of maintaining a regular job? (Check one)

_____ Excellent
_____ Good
_____ Fair
_____ Poor
_____ None

G. **Work History**

17. List employment history, most recent job first.

Job Title	Duties	Dates of Employment

18. List any pre-injury work skills or traits that may assist in obtaining and maintaining a job.

H. **Accident Information**

19. Period of time unconscious or in coma (if you do not know put a ? in space):
_____ Days in coma

Comments (List source of information e.g., hospital records, family comment, etc.):

20. Length of the amnesia period (the time after regaining consciousness for which one is unable to remember ongoing events). If none, mark 0; if you do not know place a ? in the space. _____ Days with amnesia

Comments (List of information):

21. Was the skull fractured by the accident? _____ Yes _____ No

Comments:

22. Type of injury: (Check one)

_____ Closed Head Injury
(Brain injured but not penetrated by sharp object)
_____ Open Head Injury
(Brain injured by penetration of object through skull)
_____ Uncertain

23. Significant injuries resulting from this accident: (Check all that apply)

_____ Face
_____ Neck
_____ Back
_____ Chest
_____ Right arm
_____ Lest arm
_____ Right leg
_____ Left leg
_____ Internal
_____ Other (specify): _____
_____

24. Cause of the injury: (Check one)

Motor Vehicle:

_____ Automobile (car, truck) accident with seat belt
_____ Automobile (car, truck) accident without seat belt
_____ Motorcycle accident with helmet
_____ Motorcycle accident without helmet

or Other Vehicle Accident:

_____ Bicycle accident with helmet
_____ Bicycle accident without helmet
_____ Other vehicle

or Non-Vehicle Accident:

_____ Hit by car (pedestrian)
_____ Fall
_____ Sports accident
_____ Gunshot
_____ Assault
_____ Other (please describe): _____
_____

Please use the space below to describe details of how the accident occurred and resulting injuries.

25. Was this an alcohol related accident? (Check one) If no, go to Item 26.

_____ Yes
_____ No

If Yes, was the injured person drinking?

_____ Yes
_____ No

Was the injured person described in this survey in any way responsible for the accident?

_____ Yes
_____ No

If yes, describe how alcohol was involved.

26. How many head injuries with loss of consciousness were experienced, including the present one? (Check one)

_____ one
_____ two
_____ three or more
_____ don't know (unsure)

Describe previous head injuries.

I. **Problems Resulting from the Accident**

27. Current problems which are a result of the accident that caused the head injury: (Check all that apply)

Physical Problems:

_____ Balance
_____ Lifting
_____ Walking
_____ Spinal Cord Injury
_____ Weakness
_____ Other _____

Sensory and Motor Problems:

_____ Visual
_____ Hearing
_____ Smell
_____ Taste
_____ Coordination
_____ Pain Perception
_____ Seizures
_____ Other (Please list): _____
_____

Cognitive Problems:

_____ Memory
_____ Reading
_____ Writing
_____ Organizing and Planning Activities
_____ Visual-Spatial (e.g., map reading, route findings, driving skills, etc.)
_____ Attention
_____ Communication
_____ Other (Please list): _____
_____

28. Severity of current or recurrent problems: (Check appropriate column for each problem)

Emotional Related Problems

	No Problem	Mild	Moderate	Severe
Alcohol or substance abuse	_____	_____	_____	_____
Depression	_____	_____	_____	_____
Anxiety	_____	_____	_____	_____
Frustration	_____	_____	_____	_____
Boredom	_____	_____	_____	_____
Loneliness	_____	_____	_____	_____
Anger	_____	_____	_____	_____
Paranoid or Suspicious	_____	_____	_____	_____
Auditory Hallucinations	_____	_____	_____	_____
Visual Hallucinations	_____	_____	_____	_____
Behaviorally out of Control	_____	_____	_____	_____
Other (specify) _____	_____	_____	_____	_____

_____

29. Social and behavioral problems: (Check all that apply)

_____ Socially awkward or uncomfortable (lost sense of humor or sensitivity to feelings of others)
_____ Poor judgement
_____ Immature
_____ Impulsive
_____ Aggressive - nonassaultive
_____ Aggressive - assaultive
_____ Irritable
_____ Socially isolated/withdrawn
_____ Abandoned/rejected by friends
_____ Other (specify) _____
_____

Comments: _____

30. Check the statement that best describes mobility. (Check one)

_____ Walks independently
_____ Uses crutches/walker/cane
_____ Uses standard wheelchair
_____ Uses electric wheelchair
_____ Battery operated cart
_____ Confined to bed
_____ Other (specify)_____
_____

J. **Activities of Daily Living**

31. Person's current level of independence: (Check one column for each activity)

Activity	Independently	With Assistance	Totally Dependent	Don't Know
Selects clothing	_____	_____	_____	_____
Dresses self	_____	_____	_____	_____
Baths self	_____	_____	_____	_____
Grooming	_____	_____	_____	_____
Makes change for $5.00	_____	_____	_____	_____
Finds way in neighborhood	_____	_____	_____	_____
Prepares own meals	_____	_____	_____	_____
Washes dishes	_____	_____	_____	_____
Crosses the street	_____	_____	_____	_____
Cleans the house	_____	_____	_____	_____
Takes care of minor injuries	_____	_____	_____	_____
Obtains medical help if needed	_____	_____	_____	_____
Uses telephone	_____	_____	_____	_____
Shops for groceries	_____	_____	_____	_____
Manages own finances	_____	_____	_____	_____
Drives a car	_____	_____	_____	_____
Uses public transportation	_____	_____	_____	_____

32. Accuracy of the data in this survey up to this point: (Check one)

_____ Poor, many guesses
_____ Fair, several guesses
_____ Good, few guesses
_____ Very accurate

****

Please take a moment and list any concerns that you have regarding future work or independent living needs described in this survey. Use the space below for additional comments.

Case #: _____ 12/19/91

Family Interview and Background Information Questionnaire of TBI Survivors

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Part II

Instructions: This part of the questionnaire should be completed by the interviewer while in the presence of the head injured person. Use your own judgement as to how to phrase or rephrase questions in order to obtain the best response. A family member or significant other may need to be used to verify accuracy of information.

Read each of the statements below and indicate if any changes have occurred since the time of the head injury. Circle the number that best describes how this person has changed. Use the space provided for comments or to provide additional information.

33. Ability to learn.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

34. Memory for things that need to be done routinely or in the future.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

35. Ability to plan activities, carry them out and self-monitor.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

36. Initiative to start tasks and complete them.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

37. Speed of thinking when responding to questions or general reactions to novel situations.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

38. Emotional status.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

39. Sensitivity (to others, to noise or to light).

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

40. Alcohol and drug use.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

41. Social and interpersonal skills.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

42. Emotional tolerance to stress.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

43. Relationship to family members and close friends.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

44. Endurance.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

45. Physical skills necessary for work, play and self-care.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

46. Work potential for job placement or return to a former job.

1	2	3	4
Significantly Changed for the Worse	**Minor Change for the Worse**	**About the Same**	**Better Than Before Injury**

Comments:

****

In this final section, please provide any information which you feel may be of use to the rehabilitation counselor in employment planning.

47. Describe any pre-injury skills or abilities that may provide clues for future employment.

48. Describe hobbies or spare time activities that may assist in identifying work interests.

49. Accuracy of the data in this section of survey: (Check one)

_____ Poor, many guesses
_____ Fair, several guesses
_____ Good, few guesses
_____ Very accurate

****

Please take a moment and list any concerns that you have regarding future work or independent living needs described in this survey. Use the space below for additional comments.

VOCATIONAL ADAPTIVITY SCALE (VAS)
COMPOSITE PROFILE AND ASSESSMENT SUMMARY

by
Dale F. Thomas, Ph.D.
Research and Training Center
University of Wisconsin-Stout

(For use with the Vocational Adaptivity Scale)

Sources of Information

The information presented in this report was gathered from a number of sources. First, cumulative records were reviewed to determine current levels of proficiency in terms of functional skills in reading and math. Special areas of training or vocational preparation were also noted. Next, information obtained from two interviews were used to document current abilities in regard to vocational decision making and ability to structure a self-directed job search which included participation in job interviews. Finally, after placement on a worksite to examine ability to perform the duties and responsibilities associated with the stated job goal, opinions as to vocational and interpersonal skills were assessed. During this time, the opinions and comments of the employer formed the basis of the job site evaluation.

Date _____

IDENTIFYING DATA

Evaluee: _____

Evaluator: _____

Immediate Job Goal: _____

Alternative: _____

Long Term Job Goal: _____

Alternative: _____

Situational Assessment Site: _____

Date of Assessment: _____

Job Performed: _____

Rater(s): _____

Summary of narrative from File Review Form and background information including amount of previous vocational preparatory training:

Functional Description of Current:

Math Skills: _____

_____

_____

_____

_____

_____

_____

Reading Skills: _____

_____

_____

_____

_____

_____

_____

VOCATIONAL ADAPTIVITY SCALE (VAS)

Composite Profile

(X) Not Observed	1 Unacceptable or poor	2 Marginal	3 Average or adequate, no problem	4 Above average	5 Very good, represents an asset

I. JOB SEARCH SKILLS	(X) Not Observed	Composite Rating (Circle One)
1. Displays the ability to identify realistic job goals	_____	1 2 3 4 5
2. Produces correspondence, such as letters of inquiry and follow-up letters, or has a reliable resource to assist as necessary	_____	1 2 3 4 5
3. Demonstrates knowledge of how to independently make initial employer contacts and establish a meeting or interview time	_____	1 2 3 4 5
4. Demonstrates knowledge of how to comprehensively canvas the community to search for employment	_____	1 2 3 4 5
5. Demonstrates knowledge of a method to use to track and record job leads and employer contacts	_____	1 2 3 4 5
6. Plans on spending an adequate and consistent effort in searching for employment	_____	1 2 3 4 5
7. Is able to provide the names, addresses, and phone numbers of personal and work references upon request	_____	1 2 3 4 5
8. References can support the fact that the person possesses the capabilities and personal requirements demanded by the job	_____	1 2 3 4 5
9. Demonstrates the ability to describe disability or limitations in a functional and nonstigmitizing manner	_____	1 2 3 4 5
10. Is able to describe a method of independently following up on all job leads	_____	1 2 3 4 5
11. Has a network of friends, relatives, and business contacts to assist in locating possible job openings	_____	1 2 3 4 5
12. Has access to reliable transportation to interviews and work	_____	1 2 3 4 5
13. General rating of job search skills	_____	1 2 3 4 5

Comments on Job Search Skills:

VOCATIONAL ADAPTIVITY SCALE

Composite Profile

(X) Not Observed	1 Unacceptable or poor	2 Marginal	3 Average or adequate, no problem	4 Above average	5 Very good, represents an asset

II. INTERVIEWING SKILLS	(X) Not Observed	Circle One
14. Uses telephone appropriately to inquire about job opportunities	____	1 2 3 4 5
15. Uses appropriate telephone demeanor and language	____	1 2 3 4 5
16. Arrives on time, presents self adequately, and waits appropriately before the interview	____	1 2 3 4 5
17. Has a well organized, neatly typed resume that reflects previous training and work experience in the area of the job goal	____	1 2 3 4 5
18. Fills out application neatly and completely with appropriate references	____	1 2 3 4 5
19. Enters the interview appropriately and demonstrates good initial impression (e.g., handshake, greeting, response to interviewer)	____	1 2 3 4 5
20. Demonstrates an assertive personal approach in the interview (e.g., eye contact, firm handshake) without being overbearing	____	1 2 3 4 5
21. Demonstrates courtesy towards the interviewer	____	1 2 3 4 5
22. Expresses a general knowledge of the job and the company in which employment is sought	____	1 2 3 4 5
23. Positively relates background training and work experience as a qualification for the intended job	____	1 2 3 4 5
24. Avoids making negative remarks about present or former employers	____	1 2 3 4 5
25. Answers open-ended general questions	____	1 2 3 4 5
26. Explains employment difficulties appropriately (e.g., past employment problems or gaps in employment history)	____	1 2 3 4 5
27. Deals with sensitive material or problem areas in a positive, constructive manner	____	1 2 3 4 5
28. Requests information on wages and fringe benefits without overemphasizing their importance	____	1 2 3 4 5
29. Demonstrates the ability to keep pace and place in the interview	____	1 2 3 4 5
30. Thanks the interviewer for their time	____	1 2 3 4 5
31. General rating of interviewing skills	____	1 2 3 4 5

Comments on Interviewing Skills:

VOCATIONAL ADAPTIVITY SCALE
(Composite Profile)

(X)	1	2	3	4	5
Not Observed	Unacceptable or poor	Marginal	Average or adequate, no problem	Above average	Very good, represents an asset

III. GENERAL WORK SKILLS Work Related Skills	(X) Not Observed	Circle One
32. Follows shop rules and regulations, including safety	____	1 2 3 4 5
33. Demonstrates adequate work pace	____	1 2 3 4 5
34. Quality of work is acceptable	____	1 2 3 4 5
35. Demonstrates knowledge of job	____	1 2 3 4 5
36. Remembers work instructions	____	1 2 3 4 5
37. Demonstrates adequate productivity level	____	1 2 3 4 5
38. Dexterity is adequate in relation to desired job goal	____	1 2 3 4 5
39. Follows through on work tasks to completion	____	1 2 3 4 5
40. Arrives for work on time and promptly returns from breaks (punctuality)	____	1 2 3 4 5
41. Attendance is adequate, attends work daily, and calls with reasonable excuse when absent	____	1 2 3 4 5
42. Demonstrates a practical approach to solving work problems	____	1 2 3 4 5
43. Displays neatness and organization of work materials	____	1 2 3 4 5
44. Looks for things to do to keep busy during slow times	____	1 2 3 4 5
45. Demonstrates potential to advance on the job and assume new responsibilities	____	1 2 3 4 5
46. Reads instructions, memos, etc. without difficulty*	____	1 2 3 4 5
47. Performs simple math on the job such as counting, estimating, solving simple problems, measuring, etc.*	____	1 2 3 4 5
48. Requests assistance when needed	____	1 2 3 4 5
49. Possesses adequate skill development in relation to the demands of job	____	1 2 3 4 5
50. Demonstrates acceptable work stamina	____	1 2 3 4 5
51. General rating of work related skills	____	1 2 3 4 5

* These items may need to be assessed in relation to the targeted job area by the rater.

VOCATIONAL ADAPTIVITY SCALE
(Composite Profile)

(X)	1	2	3	4	5
Not Observed	Unacceptable or poor	Marginal	Average or adequate, no problem	Above average	Very good, represents an asset

---

III. GENERAL WORK SKILLS ASSESSMENT (Con't.)	(X) Not Observed	Circle One
Supervisory Relations		
52. Follows supervisor's work instructions accurately	_____	1 2 3 4 5
53. Works independent of the supervisor after an initial training period	_____	1 2 3 4 5
54. Refrains from complaining about co-workers, supervisors, or work tasks	_____	1 2 3 4 5
55. Cooperates with supervisors	_____	1 2 3 4 5
56. Establishes appropriate relationships with supervisors	_____	1 2 3 4 5
57. Profits from instruction or criticism	_____	1 2 3 4 5
58. Demonstrates respect for authority	_____	1 2 3 4 5
59. General rating of supervisory relations	_____	1 2 3 4 5

Comments on Work Related Skills and Supervisory Relations:

VOCATIONAL ADAPTIVITY SCALE
(Composite Profile)

(X) Not Observed	1 Unacceptable or poor	2 Marginal	3 Average or adequate, no problem	4 Above average	5 Very good, represents an asset

IV. SOCIAL ADAPTIVE BEHAVIORS	(X) Not Observed	Circle One
60. Displays an appropriate awareness of surroundings and and activities in the immediate vicinity	_____	1 2 3 4 5
61. Expresses self clearly and efficiently	_____	1 2 3 4 5
62. Demonstrates courtesy to other workers	_____	1 2 3 4 5
63. Maintains proper posture and distance from others during conversations	_____	1 2 3 4 5
64. Demonstrates appropriate volume of voice	_____	1 2 3 4 5
65. Displays acceptable expression of emotion	_____	1 2 3 4 5
66. Displays acceptable morals and ethics on the job	_____	1 2 3 4 5
67. Is easily liked and accepted by co-workers	_____	1 2 3 4 5
68. Maintains a realistic opinion of achievements and abilities	_____	1 2 3 4 5
69. Displays the ability to be appropriately assertive or to stand up for oneself	_____	1 2 3 4 5
70. Exhibits appropriate behavior	_____	1 2 3 4 5
71. Handles minor work stress and frustrations on the job	_____	1 2 3 4 5
72. Does not demonstrate swings in mood such that reactions to situations are often unpredictable	_____	1 2 3 4 5
73. Boldness does not present a problem in social situations	_____	1 2 3 4 5
74. Refrains from making others feel uncomfortable because of actions, physical appearance, or general conduct (e.g., inappropriate body movements, staring)	_____	1 2 3 4 5
75. Demonstrates an awareness and sensitivity to the feelings of others (e.g., knows when to end a conversation, when not to disturb others)	_____	1 2 3 4 5
76. Cooperates with co-workers	_____	1 2 3 4 5
77. Refrains from making others uncomfortable by awkward comments or out of context, inappropriate remarks	_____	1 2 3 4 5

VOCATIONAL ADAPTIVITY SCALE
(Composite Profile)

(X) Not Observed	1 Unacceptable or poor	2 Marginal	3 Average or adequate, no problem	4 Above average	5 Very good, represents an asset

IV. SOCIAL ADAPTIVE BEHAVIORS (Con't.)	(X) Not Observed	Circle One
78. Displays facial expression appropriate to the situation	_____	1 2 3 4 5
79. Does not distract or disturb others at work	_____	1 2 3 4 5
80. Offers acceptable excuses for inappropriate behaviors if necessary*	_____	1 2 3 4 5
81. Exhibits enthusiasm appropriately giving the impression of being motivated to work	_____	1 2 3 4 5
82. Demonstrates adequate grooming and hygiene	_____	1 2 3 4 5
83. Delays immediate desires in order to work for long term goals*	_____	1 2 3 4 5
84. Views outcome of events as controllable and determined by actions on the job (e.g., effort expended or skills rather than merely luck)	_____	1 2 3 4 5
85. Parent's or family's attitudes do not interfere with rehabilitation efforts*	_____	1 2 3 4 5
86. Demonstrates a desire for, or need to work*	_____	1 2 3 4 5
87. General rating of self-presentation and individual characteristics	_____	1 2 3 4 5
88. General rating of social adaptive behaviors	_____	1 2 3 4 5

Comments on Social Adaptive Behaviors:

* Item may need to be assessed in relation to the targeted job area by the rater

VOCATIONAL ADAPTIVITY SCALE
SUMMARY OF FINDINGS

In light of the findings of this assessment, please address the following issues:

1. Are immediate and long-term goals and alternatives realistic? If not, state why. If job goals are realistic, identify what may be done to remediate identified problems which may cause work-related problems. If the problems are unable to be rectified or if job goals are unrealistic, consider further evaluation or suggestions for identification of alternate goals.

2. What type of employment situation would appear to be of most benefit at present? Specify any support systems or special considerations that are needed.

(over)

3. Would the provision of further vocational training enhance employability or capability to function more independently or to perform skills at a higher skill level than the evaluee currently aspires? If yes, please explain.

4. If specific questions regarding adaptability to a job exists because of behavioral problems, skill deficits, or other reasons, clearly state the problem, estimate the likelihood for change, and state specific steps that could be taken to promote a positive change. Consider ways of modifying job duties or the work environment, if appropriate, or consider other compensatory measures.

Performance Profiling Form

PART I: THE PHYSICAL VARIABLES PROFILE

Dale F. Thomas, Ph.D.
Research and Training Center
University of Wisconsin-Stout
November, 1991

Name:	Date:
Rater:	Rater's Title:

DIRECTIONS: This form is intended for use by personnel who will be planning vocational rehabilitation activities for persons with brain trauma injuries. An attending physician will generally be able to address the majority of the items on this list from their knowledge of the person. In cases where a physician is unable to complete this form, a rehabilitation nurse, therapist, or a medical case manager may be able to provide information. This form is intended to be used as an aid to rehabilitation planning and not as a replacement for a standard physical examination report.

Steps to Complete the Physical Variables Profile

1. Examine the list of variables and rate the impairment or limitations which exist. In the column "Impairment or Functional Limitations" circle a 0, 1, or 2 which identifies the degree of limitations which exists, using the ratings described below:

   0 - **Within Normal Limits**. A variable is of no consequence, rarely occurs, or the problem has been corrected by an aid or appliance such as glasses or a hearing aid. For informational purposes, the rater may wish to further indicate if the variable is at the high end (H) or low end (L) of the category "within normal limits." In some cases an "H" or "L" rating will be irrelevant and unnecessary.

   1 - **Minor**. The variable is of some consequence and may affect vocational, social, or personal adjustment. As an example, the rater may wish to state that a problem or deficit exists, but it is uncertain as to whether it will cause future problems. In some cases a job may need to be modified to minimize the impact of these variables. Examples may include well controlled epilepsy, fatiguability, or problems with balance.

   2 - **Notable**. Moderate to significant consequences may affect vocational, social, or personal adjustment. Examples may include paralysis, significant weakness, or impaired motor skills which are unlikely to be compensated for and which are essential to document for rehabilitation planning.

2. Complete the last column entitled "Likelihood of Work Related Problems in Area of Job Goal" only if job goals are identified. Due to the fact that the job goal will often determine whether or not an impairment or limitation will cause work-related problems, this part cannot be completed unless job goals are identified. Space for rating two separate job goals is provided. Typically, these ratings will be provided by a vocational specialist unless this information is specifically requested of the physician or medical specialist.

3. Use the comment section after each variable to provide additional information or for items in which a minor or notable problem exists.

The Performance Profiling Form was originally developed in 1988 as a means of identifying cognitive, physical, behavioral, and functional limitations which may impact on the rehabilitation process of persons who have sustained a brain trauma injury. The variables listed on this form are not extensive nor are they inclusive of the wide range of functional limitations which may occur following a brain injury. This list, however, was developed from a research project which identified the types of functional limitations which are most common and which may cause problems in planning community-based employment.

PHYSICAL VARIABLES PROFILE

A. MOTOR STRENGTH AND COORDINATION	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
	Within Normal Limits 0	Minor Problem 1	Notable Problem 2	Primary Job Goal:			Secondary Job Goal:		
		(Circle One)		Yes	No	?	Yes	No	?
				(Circle One)			(Circle One)		
1. Ambulation	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Lifting/Weakness	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Fatiguability	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Fine motor coordination	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Gross motor coordination	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Range of motion/contractures	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Facial muscle control	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Paralysis/palsy/spasticity	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Heterotopic ossification	0	1	2	Y	N	?	Y	N	?
Comments:									
10. Dexterities (Finger, manual, etc.)	0	1	2	Y	N	?	Y	N	?
Comments:									

PHYSICAL VARIABLES PROFILE	**IMPAIRMENT OR FUNCTIONAL LIMITATIONS** Circle the Degree of Impairment or Functional Limitation Which Exists			**LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL** Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?	
B. SENSORY PROBLEMS	**Within Normal Limits 0**	**Minor Problem 1** (Circle One)	**Notable Problem 2**	**Primary Job Goal:** Yes No ? (Circle One)	**Secondary Job Goal:** Yes No ? (Circle One)
1. Vision system *Comments:*	0	1	2	Y N ?	Y N ?
2. Hearing (tinnitus, noise sensitivity) *Comments:*	0	1	2	Y N ?	Y N ?
3. Smell and taste *Comments:*	0	1	2	Y N ?	Y N ?
4. Balance/dizziness or vertigo *Comments:*	0	1	2	Y N ?	Y N ?
5. Numbness *Comments:*	0	1	2	Y N ?	Y N ?
6. Sense of body position *Comments:*	0	1	2	Y N ?	Y N ?
7. Hot/cold/light touch/pain *Comments:*	0	1	2	Y N ?	Y N ?
8. Other sensory problems *Comments:*	0	1	2	Y N ?	Y N ?

PHYSICAL VARIABLES PROFILE

C. OTHER MEDICAL ISSUES	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
	Within Normal Limits 0	Minor Problem 1 (Circle One)	Notable Problem 2	Primary Job Goal: Yes (Circle One)	No	?	Secondary Job Goal: Yes (Circle One)	No	?
1. Headaches	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Diabetes	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Cardiovascular problems	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Respiration/breathing	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Skin conditions	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Musculoskeletal problems	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Hydrocephalus/shunt	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Epilepsy	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Swallowing	0	1	2	Y	N	?	Y	N	?
Comments:									
10. Alcohol or substance abuse	0	1	2	Y	N	?	Y	N	?
Comments:									

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Performance Profiling Form

PART II: THE SOCIAL-EMOTIONAL VARIABLES PROFILE

Dale F. Thomas, Ph.D.
Research and Training Center
University of Wisconsin-Stout
November, 1991

Name:	Date:
Rater:	Rater's Title:

DIRECTIONS: This form is intended for use by personnel who will be planning vocational rehabilitation activities for persons with brain trauma injuries. A case manager, rehabilitation specialist, or social worker will generally be able to address the majority of the items on this list from their knowledge of the person. This form is not intended to be a"stand alone" assessment of daily living skills or psycho-emotional traits, but should provide a useful profiling of these traits following a functional assessment of independence and an environmental analysis.

Steps to Complete the Social-Emotional Variables Profile

1. Examine the list of variables and rate the degree of impairment or limitations which exist. In the column "Impairment or Functional Limitations" circle a 0, 1, or 2 which identifies the degree of limitations which exists, using the ratings described below:

   0 - **Within Normal Limits**. A variable is of no consequence, minor, is an infrequent occurrence, or the problem can be corrected by redirection or behavioral prompting. For informational purposes, the rater may wish to further indicate if the variable is at the high end (H) or low end (L) of the category "within normal limits." In some cases an "H" or "L" rating will be irrelevant and unnecessary.

   1 - **Minor**. The variable is of some consequence and may affect vocational, social, or personal adjustment. As an example, the rater may wish to state that a problem or deficit exists, but it is uncertain as to whether it will cause future problems. In some cases a job may need to be modified to minimize the impact of these variables. Job restructuring may be required to work around the problem such as placing the person who impulsively makes infrequent sexual comments in areas where there is minimal opportunity to be heard by people who would be offended by such comments.

   2 - **Notable**. Moderate to significant consequences may affect vocational, social, or personal adjustment. Examples may include significant inappropriate behaviors which are unlikely to be able to be compensated for, or daily living skills which may affect employment.

2. Complete the last column entitled "Likelihood of Work Related Problems in Area of Job Goal" only if job goals are identified. Due to the fact that the job goal will often determine whether or not an impairment or limitation will cause work-related problems, this part cannot be completed unless job goals are identified. Space for rating two separate job goals is provided. Typically, these ratings will be provided by a vocational specialist unless this information is specifically requested of the case manager or rehabilitation specialist completing this profile.

3. Use the comment section after each variable to provide additional information or for items in which a minor or notable problem exists.

The Performance Profiling Form was originally developed in 1988 as a means of identifying cognitive, physical, behavioral, and functional limitations which may impact on the rehabilitation process of persons who have sustained a brain trauma injury. The variables listed on this form are not extensive nor are they inclusive of the wide range of functional limitations which may occur following a brain injury. This list, however, was developed from a research project which identified the types of functional limitations which are most common and which may cause most problems in planning community-based employment.

SOCIAL-EMOTIONAL VARIABLES PROFILE

IMPAIRMENT OR FUNCTIONAL LIMITATIONS
Circle the Degree of Impairment or Functional Limitation Which Exists

LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL
Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?

A. SOCIAL ADJUSTMENT	Within Normal Limits 0	Minor Problem 1	Notable Problem 2 (Circle One)	Primary Job Goal: Yes	No	? (Circle One)	Secondary Job Goal: Yes	No	? (Circle One)
1. Maturity	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Social appropriateness	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Concern for others	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Spontaneity	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Acceptable activity level	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Tolerance of minor frustration	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Appropriate emotions shown	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Isolation or withdrawal	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Apathetic attitude	0	1	2	Y	N	?	Y	N	?
Comments:									
10. Verbally aggressive	0	1	2	Y	N	?	Y	N	?
Comments:									

SOCIAL-EMOTIONAL VARIABLES PROFILE	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
A. SOCIAL ADJUSTMENT (Continued)	Within Normal Limits 0	Minor Problem 1	Notable Problem 2	Primary Job Goal: Yes	No	?	Secondary Job Goal: Yes	No	?
		(Circle One)		(Circle One)			(Circle One)		
11. Aggressive assaultive *Comments:*	0	1	2	Y	N	?	Y	N	?
12. Initiative to start tasks *Comments:*	0	1	2	Y	N	?	Y	N	?
13. Sexual appropriateness *Comments:*	0	1	2	Y	N	?	Y	N	?
14. Impulsive behavior *Comments:*	0	1	2	Y	N	?	Y	N	?
15. Impulsive speech *Comments:*	0	1	2	Y	N	?	Y	N	?
16. Common sense *Comments:*	0	1	2	Y	N	?	Y	N	?
17. Social sense *Comments:*	0	1	2	Y	N	?	Y	N	?
18. Accuracy of self appraisal *Comments:*	0	1	2	Y	N	?	Y	N	?
19. Excessive complaints *Comments:*	0	1	2	Y	N	?	Y	N	?

SOCIAL-EMOTIONAL VARIABLES PROFILE

IMPAIRMENT OR FUNCTIONAL LIMITATIONS
Circle the Degree of Impairment or Functional Limitation Which Exists

LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL
Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?

B. DAILY LIVING SKILLS	Within Normal Limits 0	Minor Problem 1	Notable Problem 2 (Circle One)	Primary Job Goal: Yes	No	?	Secondary Job Goal: Yes	No	? (Circle One)
1. Self-care (hygiene, toileting)	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Home living skills	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Medical self-care	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Sets up own appointments	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Handle money/makes change	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Route finding in neighborhood	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Transportation use	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Safety awareness	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Job seeking independence	0	1	2	Y	N	?	Y	N	?
Comments:									

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Performance Profiling Form

PART III: THE NEUROPSYCHOLOGICAL VARIABLES PROFILE

Dale F. Thomas, Ph.D.
Research and Training Center
University of Wisconsin-Stout
November, 1991

Name:	Date:
Rater:	Rater's Title:

DIRECTIONS: This form is intended for use by personnel who will be planning vocational rehabilitation activities for persons with brain trauma injuries. A neuropsychologist who has evaluated the person or who has consulted on this case will generally be able to address the majority of the items on this list from their knowledge of the person. In cases where a neuropsychologist is unable to complete this form, a rehabilitation specialist with access to neuropsychological information may be able to document the information requested. This form is intended to be used as an aid to rehabilitation planning and not as a replacement for a neuropsychological evaluation.

Steps to Complete the Neuropsychological Variables Profile

1. Examine the list of variables and rate the degree of impairment or limitations which exist. In the column "Impairment or Functional Limitations" circle a 0, 1, or 2 which identifies the degree of limitations which exists, using the ratings described below:

   0 - **Within Normal Limits.** A variable is of no consequence, minor, is an infrequent occurrence, or the problem has been corrected or affective compensatory strategies are consistently used. For informational purposes, the rater may wish to further indicate if the variable is at the high end (H) or low end (L) of the category "within normal limits." In some cases an "H" or "L" rating will be irrelevant and unnecessary.

   1 - **Minor.** The variable is of some consequence and may affect vocational, social, or personal adjustment. As an example, the rater may wish to state that a problem or deficit exists, but it is uncertain as to whether it will cause future problems. In some cases a job may need to be modified to minimize the impact of these variables.

   2 - **Notable.** Moderate to significant consequences may affect vocational, social, or personal adjustment. Examples may include significant memory loss or dysarthric speech which is unlikely to be compensated for.

2. Complete the last column entitled "Likelihood of Work Related Problems in Area of Job Goal" only if job goals are identified. Due to the fact that the job goal will often determine whether or not an impairment or limitation will cause work-related problems, this part cannot be completed unless job goals are identified. Space for rating two separate job goals is provided. Typically, these ratings will be provided by a vocational specialist unless this information is specifically requested of the neuropsychologist.

3. Use the comment section after each variable to provide additional information or for items in which a minor or notable problem exists.

The Performance Profiling Form was originally developed in 1988 as a means of identifying cognitive, physical, behavioral, and functional limitations which may impact on the rehabilitation process of persons who have sustained a brain trauma injury. The variables listed on this form are not extensive nor are they inclusive of the wide range of functional limitations which may occur following a brain injury. This list, however, was developed from a research project which identified the types of functional limitations which are most common and which may cause problems in planning community-based employment.

NEURO-PSYCHOLOGICAL VARIABLES PROFILE

A. GENERAL COGNITIVE FUNCTIONS	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
	Within Normal Limits 0	Minor Problem 1 (Circle One)	Notable Problem 2	Primary Job Goal: Yes (Circle One)	No	?	Secondary Job Goal: Yes (Circle One)	No	?
1. Alertness and vigilance	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Attention/concentration	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Perseveration	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Problem solving skills	0	1	2	Y	N	?	Y	N	?
Comments:									
5. General fund of information	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Abstraction skills expressed	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Arithmetic abilities	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Hemi-spatial neglect	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Insightfulness	0	1	2	Y	N	?	Y	N	?
Comments:									
10. Decision making ability	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
A. GENERAL COGNITIVE FUNCTIONS (Continued)	Within Normal Limits 0	Minor Problem 1	Notable Problem 2	Primary Job Goal:			Secondary Job Goal:		
	(Circle One)			Yes	No	?	Yes	No	?
				(Circle One)			(Circle One)		
11. Judgement	0	1	2	Y	N	?	Y	N	?
Comments:									
12. Cognitive flexibility	0	1	2	Y	N	?	Y	N	?
Comments:									
13. Information processing speed	0	1	2	Y	N	?	Y	N	?
Comments:									
14. Plans/carries out activities	0	1	2	Y	N	?	Y	N	?
Comments:									
15. Self-regulation/direction	0	1	2	Y	N	?	Y	N	?
Comments:									
16. Awareness of limitations	0	1	2	Y	N	?	Y	N	?
Comments:									
17. Awareness of assets	0	1	2	Y	N	?	Y	N	?
Comments:									
18. Ability to learn new info.	0	1	2	Y	N	?	Y	N	?
Comments:									
19. Alcohol or chemical abuse	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	**IMPAIRMENT OR FUNCTIONAL LIMITATIONS** Circle the Degree of Impairment or Functional Limitation Which Exists			**LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL** Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
B. MEMORY (Immediate and delayed as appropriate)	**Within Normal Limits 0**	**Minor Problem 1** (Circle One)	**Notable Problem 2**	**Primary Job Goal:** **Yes** (Circle One)	**No**	**?**	**Secondary Job Goal:** **Yes** (Circle One)	**No**	**?**
1. Auditory/verbal	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Visual/nonverbal	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Procedural/skill	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Memory for designs/figures	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Remote (historical)	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Prospective (future)	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	**IMPAIRMENT OR FUNCTIONAL LIMITATIONS** Circle the Degree of Impairment or Functional Limitation Which Exists			**LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL** Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
C. COMMUNICATION SKILLS	**Within Normal Limits 0**	**Minor Problem 1** (Circle One)	**Notable Problem 2**	**Primary Job Goal:** Yes	No	? (Circle One)	**Secondary Job Goal:** Yes	No	? (Circle One)
1. Understand verbal commands	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Writing skills	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Stays on topic when speaking	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Spontaneity/appropriateness	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Tangential/circumstantial	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Intelligibility of speech	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Voice volume	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Vocabulary	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
D. PSYCHOMOTOR SKILLS	Within Normal Limits 0	Minor Problem 1 (Circle One)	Notable Problem 2	Primary Job Goal: Yes	No	? (Circle One)	Secondary Job Goal: Yes	No	? (Circle One)
1. Simple assembly skills	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Fine motor control	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Gross motor control	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Simple reaction time	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Simple drawing skills	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Visual-spatial skills	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	**IMPAIRMENT OR FUNCTIONAL LIMITATIONS** Circle the Degree of Impairment or Functional Limitation Which Exists			**LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL** Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
E. MENTAL HEALTH ISSUES	**Within Normal Limits 0**	**Minor Problem 1** (Circle One)	**Notable Problem 2**	**Primary Job Goal:** Yes	No	? (Circle One)	**Secondary Job Goal:** Yes	No	? (Circle One)
1. Depression	0	1	2	Y	N	?	Y	N	?
Comments:									
2. Anxiety or panic states	0	1	2	Y	N	?	Y	N	?
Comments:									
3. Hypomanic or hyperactive	0	1	2	Y	N	?	Y	N	?
Comments:									
4. Suspiciousness or paranoid	0	1	2	Y	N	?	Y	N	?
Comments:									
5. Delusions	0	1	2	Y	N	?	Y	N	?
Comments:									
6. Auditory hallucinations	0	1	2	Y	N	?	Y	N	?
Comments:									
7. Visual hallucinations	0	1	2	Y	N	?	Y	N	?
Comments:									
8. Emotionally labile (moody)	0	1	2	Y	N	?	Y	N	?
Comments:									
9. Behavioral discontrol	0	1	2	Y	N	?	Y	N	?
Comments:									
10. Anti-social tendencies	0	1	2	Y	N	?	Y	N	?
Comments:									

NEURO-PSYCHOLOGICAL VARIABLES PROFILE	IMPAIRMENT OR FUNCTIONAL LIMITATIONS Circle the Degree of Impairment or Functional Limitation Which Exists			LIKELIHOOD OF WORK RELATED PROBLEMS IN AREA OF JOB GOAL Is it Likely That the Impairment or Limitations Will Cause Work Problems in the Area of Primary Job Goal?					
E. MENTAL HEALTH ISSUES (Continued)	Within Normal Limits 0	Minor Problem 1 (Circle One)	Notable Problem 2	Primary Job Goal: Yes	No	?	Secondary Job Goal: Yes	No	?
				(Circle One)			(Circle One)		
11. Self-centered/childish	0	1	2	Y	N	?	Y	N	?
Comments:									
12. Disinhibition	0	1	2	Y	N	?	Y	N	?
Comments:									
13. Confused thinking	0	1	2	Y	N	?	Y	N	?
Comments:									
14. Unusual content of thought	0	1	2	Y	N	?	Y	N	?
Comments:									

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FUNCTIONAL ASSESSMENT INVENTORY

MATERIALS DEVELOPMENT CENTER

Nancy M. Crewe, Ph.D., Associate Professor, Department of Physical Medicine and Rehabilitation, University of Minnesota
Gary T. Athelstan, Ph.D. Professor, Department of Physical Medicine and Rehabilitation, University of Minnesota

This study was supported in part by Social and Rehabilitation Service Research and Training Grant Number 16-P-56810.

1. LEARNING ABILITY(See Instructions.)
   - 0. No significant impairment.
   - 1. Can learn complex, employable skills but not at a normal rate of speed.
   - 2. Can master fairly complex ideas and operations with special training.
   - 3. Is capable of learning only very simple tasks and then only with adequate time and repetition.
2. ABILITY TO READ AND WRITE IN ENGLISH
   - 0. No significant impairment.
   - 1. Has some difficulty reading or writing the English language due to lack of education or foreign language background; or cannot read standard print due to vision but can use Braille or large print.
   - 2. Has considerable difficulty with reading or writing the English language.
   - 3. Is unable to read or write English in print or Braille.
3. MEMORY (See instructions.)
   - 0. No significant impairment.
   - 1. Occasional memory deficit causes some difficulty.
   - 2. Memory deficit interferes significantly with new learning. Information or directions must be repeated frequently.
   - 3. Is confused or disoriented. Remembers very little from day to day.
4. SPATIAL AND FORM PERCEPTION (See Instructions.)
   - 0. No significant impairment.
   - 1. Difficulty with perception interferes with tasks requiring fine discrimination.
   - 2. Occasionally gets lost or shows other evidence of perceptual impairment in daily living.
   - 3. Extreme perceptual distortion evidenced by behavior (e.g., becoming lost even in familiar places or inability to identify objects.)
5. VISION (See Instructions.)
   - 0. No significant impairment.
   - 1. Has difficulty handling work involving fine visual details.
   - 2. Impairment is sufficient to interfere with major activities such as driving or reading.
   - 3. Total or nearly total loss of vision. (Uses cane for mobility outdoors.)
6. HEARING (See Instructions.)
   - 0. No significant impairment.
   - 1. Has some difficulty understanding conversation or using a telephone.
   - 2. Can handle face-to-face conversation with the help of lipreading, but is unable to use a standard telephone. Is unable to pick up certain environmentally relevant sounds (e.g., bells or high-pitched tones).
   - 3. Extremely hard-of-hearing or deaf, or is unable to comprehend any speech.
7. SPEECH
   - 0. No significant impairment.
   - 1. Speech is easily intelligible, but voice quality or speech pattern is distracting, or speech can be easily intelligible with special effort (e.g., taking care to talk slowly).
   - 2. Speech is difficult to understand. Repetition is often necessary.
   - 3. Speech is not usable as a means of communication.

8. LANGUAGE FUNCTIONING (See Instructions.)
   0. No significant impairment.
   1. Ability to communicate orally in the English language may be slightly to moderately impaired. If hearing-impaired, is able to use lipreading and speech to communicate.
   2. Has considerable difficulty communicating. Is limited to single words or short phrases or to simple concepts that can be communicated nonverbally. If hearing-impaired, uses sign language effectively but does not lipread or speak.
   3. Verbal communication is nearly impossible.

9. UPPER EXTREMITY FUNCTIONING
   0. No significant impairment.
   1. Partial or total loss of functioning in one upper extremity. The other is intact and functions well.
   2. Loss of function to at least some extent in both upper extremities; or severe loss of functioning in dominant side.
   3. No useful functioning in either upper extremity.

10. HAND FUNCTIONING (See Instructions.)
   0. No significant impairment.
   1. Would be unable to perform most tasks requiring fine dexterity, speed, or coordination.
   2. Seriously impaired, but with or without the use of aids or prostheses can write and perform activities of daily living, such as feeding.
   3. Little or no hand functioning.

11. MOTOR SPEED (See Instructions.)
   0. No significant impairment.
   1. Moves more slowly than average.
   2. Moves very slowly.
   3. Extreme motor retardation.

12. AMBULATION OR MOBILITY (See Instructions.)
   0. No significant impairment.
   1. Mild impairment, but does not require assistance from others to get around in the community.
   2. Moderate impairment. Sometimes requires help from others in order to get around in the community.
   3. Severe impairment. Usually requires assistance from others in order to get around in the community.

13. CAPACITY FOR EXERTION (See Instructions.)
   0. No significant impairment.
   1. May encounter some difficulties in occupations requiring substantial physical exertion (e.g., occupations requiring frequent lifting of 25 lbs. or a great deal of walking or bending). However, physical activity in moderate amounts is acceptable.
   2. Occupations requiring moderately strenuous physical activity are ruled out. Limited to jobs classified as light by the Department of Labor.
   3. Limited to sedentary jobs.

14. ENDURANCE
   0. No significant impairment.
   1. Can work a full day with special rest periods arranged.
   2. Can work only part-time (16 to 32 hours per week).
   3. Unable to work for more than one or two hours a day (15 hours or less per week).

15. LOSS OF TIME FROM WORK (See Instructions.)
   0. No significant impairment.
   1. Requires 1-2 days or parts of several days off each month for medical supervision, therapy (including psychotherapy), or recurring medical or personal problems.
   2. Requires an average of one day off each week.
   3. Requires frequent or extended absences from jobs.

16. STABILITY OF CONDITION (See Instructions.)
   0. No significant impairment.
   1. Stable if controlled by diet, treatment, or exercise.
   2. Condition is likely to be slowly progressive, or course is unpredictable and may result in further loss of functioning.
   3. Condition is likely to worsen significantly in the foreseeable future.

17. WORK HISTORY
   0. No significant impairment.
   1. Has little or no work experience due to youth or other reasons acceptable to most employers; or had a good work record prior to disability, but has now been out of work for more than one year.
   2. Work history includes negative aspects, such as frequent tardiness or frequent job changes with periods of unemployment.
   3. Work history is a clear liability, possibly including long periods of unemployment and poor references.

18. ACCEPTABILITY TO EMPLOYERS (See Instructions.)
   0. No significant impairment.
   1. Some physical, demographic, or historical characteristics may interfere with client's acceptability to some employers.
   2. Possesses characteristics which have a very low degree of employer and public acceptance, despite their lack of interference with performance (e.g., age, controlled epilepsy, or history of severe or recurring mental illness).
   3. Current or recent characteristics which cannot be avoided or modified are likely to make this person unacceptable to most potential employers (e.g., recent criminal history, uncontrolled epilepsy, or noticeable behavior deviation).

19. PERSONAL ATTRACTIVENESS (See Instructions.)
   0. No significant impairment.
   1. Some aspect of personal appearance or hygiene is unattractive to others but tolerable with familiarity.
   2. Has more severe problems with personal appearance or hygiene that are difficult for others to accept even with familiarity.
   3. Very severe problems with personal appearance or hygiene are likely to cause avoidance by others.

20. SKILLS (See Instructions.)
    0. No significant impairment.
    1. No available skills that are job-specific. However, possesses general skills (i.e., educational or interpersonal) that could be used in a number of jobs.
    2. Has few general skills. Job-specific skills are largely unusable due to disability or other factors.
    3. Has no job-specific skills and has very few general or personal skills transferable to a job situation.

21. ECONOMIC DISINCENTIVES
    0. No significant impairment.
    1. Potential for employment is affected to some degree by economic disincentives (e.g., may need an unusually high salary or special conditions that could be difficult to find).
    2. Job options are quite restricted because of potential loss of benefits (e.g., may choose to consider only part-time or low-income jobs that allow benefits to continue).
    3. In all probability cannot afford to take a job or will choose not to take a job because of resulting loss of benefits (e.g., financial support, medical coverage, or attendant care).

22. ACCESS TO JOB OPPORTUNITIES
    0. No significant impairment.
    1. Employment opportunities are somewhat limited (e.g., due to transportation problems or geographic location).
    2. Employment opportunities are significantly limited. Few accessible and appropriate work settings are available.
    3. Extremely limited opportunities. May be homebound or living in an area where very few jobs exist.

23. REQUIREMENTS FOR SPECIAL WORKING CONDITIONS
    0. No significant impairment.
    1. Placement options are limited to some degree by disability requirements (e.g., may need freedom to sit, stand, and move around as needed, or may need to avoid exposure to dangerous equipment.)
    2. Multiple environmental restrictions related to the disability substantially limit placement alternatives.
    3. Capable of functioning only in highly selected settings. Special placement efforts essential.

24. WORK HABITS
    0. No significant impairment.
    1. Is deficient in work habits (e.g., punctuality, ability to persist at work tasks with minimal supervision, or appropriate interview behavior). However, is willing and able to learn these skills quite readily.
    2. Work habit deficiencies may require that work adjustment training precede employment.
    3. Has severe deficiencies in work habits and seems to have little potential for improving through work adjustment training.

25. SOCIAL SUPPORT SYSTEM (See Instructions.)
    0. No significant impairment.
    1. Little or no support system available.
    2. Support system at times encourages values or behaviors that are contrary to rehabilitation goals.
    3. Support system is clearly working against rehabilitation behaviors.

26. ACCURATE PERCEPTION OF CAPABILITIES AND LIMITATIONS
    0. No significant impairment.
    1. Has an inadequate understanding of what his or her vocational capacities are as a result of disability (e.g., may rule out too many vocational possibilities or deny the significance of some limitations).
    2. Has an unrealistic understanding of his or her vocational capacities (e.g., may rule out all vocational possibilities or deny important limitations).
    3. Refuses to accept or significantly distorts his or her limitations. Frequently gives others false, misleading, or extremely inappropriate information about the disability.

27. EFFECTIVE INTERACTION WITH EMPLOYERS AND CO-WORKERS (See instructions.)
    0. No significant impairment.
    1. Is somewhat awkward or unpleasant in social interactions.
    2. Lacks many of the skills necessary for effective social interaction.
    3. Overtly aggressive, withdrawn, defensive, bizarre, or inappropriate behavior often impairs personal interactions.

28. JUDGMENT
    0. No significant impairment.
    1. Sometimes makes unsound decisions. Does not take time to consider alternatives or consequences of behavior.
    2. Frequently makes rash or unwise decisions. Often displays inappropriate behavior or choices.
    3. Could be dangerous to self or others as a result of foolish or impulsive behavior.

29. CONGRUENCE OF BEHAVIOR WITH REHABILITATION GOALS (See Instructions.)
    0. No significant impairment.
    1. Behavior with respect to rehabilitation program appears inconsistent (i.e., it varies from day to day or from one area to another).
    2. May express desire to work but often does not act accordingly.
    3. Behavior is often in contradiction to goals of program.

30 INITIATIVE AND PROBLEM-SOLVING ABILITY

0 No significant impairment
1 Is able to see alternatives and work effectively toward solutions to problems, but needs frequent direction and encouragement to take action
2 Often needs help identifying tasks or solutions to problems, and needs repeated urging to take action
3 Usually seems unable to identify tasks or possible solutions to problems. Needs constant urging to undertake tasks and seldom completes them without help

STRENGTH ITEMS (Check all that apply.)

31 Has an unusually attractive physical appearance
32 Has an exceptionally pleasing personality
33 Is extremely bright, or has an exceptional verbal fluency
34 Possesses a vocational skill that is in great demand
35 Has excellent educational credentials qualifying him or her for employment desired
36 Client's family is exceptionally supportive of rehabilitation
37 Has sufficient financial resources to maintain self and family during period of rehabilitation
38 Is extremely motivated to succeed vocationally
39 Job is available for client with previous or current employer
40 Has an unusual ability to take initiative and solve problems

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Materials Development Center
Stout Vocational Rehabilitation Institute
University of Wisconsin-Stout
Menomonie, Wisconsin 54751

Program Path Outline

Date: _____

Rater: _____

Client ID code: _____
(Initials or Descriptor)

Agency/Facility: _____

Current status:

_____ New to this program
_____ Currently in other program in this facility

Referrals:

_____ Refer for immediate employment services
_____ Refer for employment preparation services
_____ Referral to other agency if vocational rehabilitation not appropriate at this time

Type of evaluation conducted:

_____ Return-to-work assessment
_____ Comprehensive vocational evaluation
_____ Specific behavioral assessment
_____ Baseline behavioral assessment
_____ Vocational readiness assessment

Number of days in evaluation/assessment: _____ days

Evaluation methods used: (Check all that apply)

_____ Work sample
_____ Situational assessment (facility based)
_____ Community-based work site assessment
_____ Psychometric assessment
_____ Other (briefly describe)

_____
_____
_____

Severity of vocational limitations in relation to targeted job goal:

_____ No limitations apparent
_____ Mild vocational limitations
_____ Moderate vocational limitations
_____ Severe vocational limitations
_____ Profound vocational limitations

Dale F. Thomas, Ph.D.
UW-Stout RRTC
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APPENDIX B

Instruments for Program Evaluation

Daily Monitoring Form

Supervisor Rating Form

Client Rating Form

Family Rating Form

DAILY MONITORING FORM
Project HIRe

WORKER:	DATES: / / to / /							
JOB COACH: WORKSITE:	Mon	Tue	Wed	Thr	Fri	Sat	Sun	WEEKLY
HOURS OF SUPPORT OR JOB COACHING (Enter to nearest quarter hour. 1:3 is 1 hour 45 minutes)								
A. Total hours at or away from work-site	___	___	___	___	___	___	___	_____
B. Hours Direct At Work-Site Support	___	___	___	___	___	___	___	_____
C. Hours of Indirect Service (see below)	___	___	___	___	___	___	___	_____
C. Hours of Support Away From Work-Site	___	___	___	___	___	___	___	_____
DIRECT AT WORK-SITE SUPPORT (Record Y/N for each type of support. Total is count of "Ys".)								
A. Evaluation and assessment	___	___	___	___	___	___	___	_____
B. Planning or counseling with worker	___	___	___	___	___	___	___	_____
C. Behavior management or work adjustment	___	___	___	___	___	___	___	_____
D. On-site job skills training	___	___	___	___	___	___	___	_____
E. Monitoring productivity	___	___	___	___	___	___	___	_____
F. Job accommodation/modification	___	___	___	___	___	___	___	_____
G. Transportation (job-related)	___	___	___	___	___	___	___	_____
H. Employer training or advisement	___	___	___	___	___	___	___	_____
I. Co-worker training or mediation)	___	___	___	___	___	___	___	_____
J. Other problems (e.g., family related)	___	___	___	___	___	___	___	_____
INDIRECT SERVICES TO WORKER (Record Y/N for type of indirect service. Total is count of "Ys")								
A. Job analysis	___	___	___	___	___	___	___	_____
B. Job development	___	___	___	___	___	___	___	_____
C. Other on-site observation	___	___	___	___	___	___	___	_____
D. Interagency consultation	___	___	___	___	___	___	___	_____
E. Coordination of services	___	___	___	___	___	___	___	_____
F. Travel time required	___	___	___	___	___	___	___	_____
G. Other administrative duties	___	___	___	___	___	___	___	_____
H. Other (list on reverse side)	___	___	___	___	___	___	___	_____
OFF-JOB SUPPORT OR COACHING (Record Y/N for each type of support. Total is count of "Ys.")								
A. Housing and residential assistance	___	___	___	___	___	___	___	_____
B. Transportation (non-job)	___	___	___	___	___	___	___	_____
C. Health and medical needs	___	___	___	___	___	___	___	_____
D. Financial management	___	___	___	___	___	___	___	_____
E. Employment and career guidance	___	___	___	___	___	___	___	_____
F. Supportive counseling	___	___	___	___	___	___	___	_____
G. Planning with family or significant others. . .	___	___	___	___	___	___	___	_____
H. Recreation and social assistance	___	___	___	___	___	___	___	_____
I. TBI support groups	___	___	___	___	___	___	___	_____
J. Other interventions (list on reverse side) . .	___	___	___	___	___	___	___	_____

JOB TITLE:	Mon	Tue	Wed	Thr	Fri	Sat	Sun	WEEKLY
TOTAL HOURS (Transfer from other side)								
INTEGRATION WITH NON DISABLED CO-WORKERS (Enter Y/N/U for each. Total is count of "Ys".)								
Extent of integration								
A. There was interation at the job								
B. There was interaction during breaks and								
C. Off job in social-recreational settings								
Access to non-disabled workers								
D. Working on jobs nearby								
E. On job with this worker								
F. Same area for breaks and lunch								
G. Were willing to assist when needed								
Worker's preference for integration								
H. Tried to or interacted with								
I. Wanted to or chose to work with								
J. Tried to or had breaks or lunch with								
K. Wanted to or attempted to socialize with . . .								
L. Wanted to or tried to establish friendships . .								

WEEKLY EMPLOYMENT QUALITY INDICATORS (Report on Weekly basis)

A. Number of days worked in week (number) . . . . . _____
B. Total hours worked (number) . . . . . _____
C. Wage rate per hour ($) . . . . . _____
D. Total gross earnings ($) . . . . . _____
E. Was wage subsidized during this week (e.g., PIC, JTPA)? (Y/N) . . . . . _____

EMPLOYMENT CONDITIONS INFORMATION (RTC only)

A. Total number workers at this work-site (number) . . . . . _____
B. Comparative productivity (estimated 1 TO 5)* . . . . . _____
C. Wage Changes: Increase/Decrease/No Change (I/D/N) . . . . . _____
D. Fringe Benefits: Comparable to/Less than (C/L) . . . . . _____
E. Employee on company's payroll (Y/N) . . . . . _____

JOB COACH TRAVEL EXPENSES (Report on Daily or Weekly Basis)

For Direct and Indirect Support at Woke-Site:

	Mon	Tue	Wed	Thr	Fri	Sat	Sun	WEEKLY
A. Total miles (number)								
B. Meals (B/L/D) ($)								
C. Miscellaneous travel expenses (parking) ($) . .								
D. Other expenses (supplies) ($)								

For Off-Job Support:

	Mon	Tue	Wed	Thr	Fri	Sat	Sun	WEEKLY
A. Total miles (number)								
B. Meals (B/L/D) ($)								
C. Miscellaneous travel expenses ($)								
D. Other expenses ($)								

COMMENTS:

* 5 = Productivity is better than non-disabled worker, 4 = equal to other workers, 3 = below other workers, 2 = well below other workers, 1 = not comparable at all

Supervisor Rating Form
Project HIRe

EMPLOYEE WORK BEHAVIORS	Compared to your other employees Currently a Problem Area	No Longer a Problem	Never Was a Problem	Unable to Say
Compared to other workers, does this worker have problems in any of these WORK BEHAVIORS? (Please circle one number after each statement)				
A. Punctuality and attendance	1	2	3	0
B. Reliability as worker	1	2	3	0
C. Stamina at job	1	2	3	0
D. Work Productivity	1	2	3	0
E. Quality of work	1	2	3	0
F. Acceptance of requirements of job	1	2	3	0
G. Overall adjustment to their job	1	2	3	0
H. Relationships with co-workers at work	1	2	3	0
I. Relationships with supervisor	1	2	3	0
J. Adaptations on the job that were needed to accommodate worker's disability	1	2	3	0
K. Problems or conflicts on job (list below) . . .	1	2	3	0
M. Amount of supervision required	1	2	3	0
L. Likelihood of keeping their job	1	2	3	0

WORKER:	SUPERVISOR:	DATE RATED: / /

COMMENTS AND SPECIFIC PROBLEMS IDENTIFIED:

RTC/UW-Stout
form: super/RTC/WIS
December 1988

Client Rating Form
Project HIRe

WORK AND SOCIAL AREAS	Currently a Problem Area	No Longer a Problem	Never Was a Problem	Unable to Say
In which of these WORK AREAS do you feel you have problems? (Please circle one number after each statement)				
A. Punctuality and attendance	1	2	3	0
B. Reliability as worker	1	2	3	0
C. Stamina at job	1	2	3	0
D. Your work productivity	1	2	3	0
E. Quality of your work	1	2	3	0
F. Acceptance of requirements of job	1	2	3	0
G. Overall adjustment to work	1	2	3	0
H. Relationships with your co-workers	1	2	3	0
I. Relationships with your supervisor.	1	2	3	0
J. Satisfaction with the job	1	2	3	0
K. Problems or conflicts on job (list below) . . .	1	2	3	0
L. Likelihood of keeping your job	1	2	3	0
M. Wages and fringe benefits	1	2	3	0
In which of these SOCIAL AREAS do your feel you have problems? (Please circle one number after each statement)				
A. Your family's acceptance of your current level of functioning	1	2	3	0
B. Quality of your relationships with other family members	1	2	3	0
C. Amount and quality of your social participation outside your family	1	2	3	0
D. Your participation in family household routines	1	2	3	0
E. Mood swings or your behavior is unpredictable .	1	2	3	0
F. Your self-reliance and decision-making	1	2	3	0
G. Amount of family support you require	1	2	3	0
H. Amount of transportation assistance you require	1	2	3	0
I. Amount of family assistance you require for your daily living and medical needs	1	2	3	0

Your DESIRE AND OPPORTUNITY to work with NON-DISABLED WORKERS at your job	Yes	No	Unable to Say
Do you wish to or want to			
A. Work closely with nondisabled workers?	1	2	0
B. Spend your breaks with those co-workers?	1	2	0
C. Become friends with those co-workers?	1	2	0
D. Spend time with away from work with them?	1	2	0
Do you find you have enough opportunities to			
E. Work on jobs with non-disabled workers?	1	2	0
F. Take breaks with these co-workers?	1	2	0
G. Make friends with these co-workers?	1	2	0

COMMENTS OR PROBLEMS:

YOUR NAME:	DATE COMPLETED: / /

RTC/UW-Stout
form: employee/WIS
December 1988

WORK AND SOCIAL AREAS WHERE FAMILY MEMBER MAY HAVE PROBLEMS	Currently a Problem Area	No Longer a Problem	Never Was a Problem	Unable to Say
In which of these WORK AREAS does this family member have problems? (Please circle <u>one</u> number after each statement)				
A. Punctuality and attendance	1	2	3	0
B. Reliability as worker	1	2	3	0
C. Stamina at job	1	2	3	0
D. Work Productivity	1	2	3	0
E. Quality of work	1	2	3	0
F. Acceptance of requirements of job	1	2	3	0
G. Overall adjustment to work	1	2	3	0
H. Relationships with co-workers	1	2	3	0
I. Relationships with supervisor	1	2	3	0
J. Satisfaction with their job	1	2	3	0
K. Problems or conflicts on job (list below) . . .	1	2	3	0
L. Likelihood of keeping their job	1	2	3	0
M. Wages and fringe benefits	1	2	3	0
In which SOCIAL AREAS does this family member have problems? (Please circle <u>one</u> number after each statement)				
A. Family acceptance of current their level of functioning	1	2	3	0
B. Quality of relationships with family members. .	1	2	3	0
C. Amount and quality of social participation outside family	1	2	3	0
D. Participation in family household routine . . .	1	2	3	0
E. Mood swings or behavior which is unpredictable.	1	2	3	0
F. Self-reliance and decision-making	1	2	3	0
G. Amount of family support required	1	2	3	0
H. Amount of transportation assistance required. .	1	2	3	0
I. Family assistance with daily living and medical needs	1	2	3	0

WORKER'S NAME:	PERSON COMPLETING THE SCALE:
DATE SCALE COMPLETED: / /	RELATIONSHIP TO WORKER:

COMMENTS AND SPECIFIC PROBLEMS IDENTIFIED:

form: family/RTC/WIS
RTC/UW-Stout
December 1988

APPENDIX C

Sample Contract Agreement

CONTRACTUAL AGREEMENT

Parties to the Agreement:

The Head Injury Re-entry Project (Project HIRe)
Research and Training Center
Stout Vocational Rehabilitation Institute
University of Wisconsin - Stout
Menomonie, WI 54751

and

The Ability Building Center, Inc. (ABC)
1911 N.W. 14th Street
Rochester, MN 55903

Responsibilities of the Head Injury Re-entry Project

The Head Injury Re-entry Project of the Research and Training Center at the University of Wisconsin-Stout, hereafter referred to as "Project HIRe," will provide the Ability Building Center, hereafter referred to as "ABC," with staff training, data collection instruments, rating scales and on site consultation on the use of these materials and financial assistance needed to continue as a satellite research site of Project HIRe from December 1, 1989 to September 29, 1990. At the time of the second contract period, it is expected that all background demographic data and information from the various forms and rating scales will be completed on all brain injured persons who were receiving service time funded by dollars from this contractual agreement.

By the beginning of the second contract period, the following items will be provided by Project HIRe to ABC:

Research and Demonstration Materials

- Assessment instruments including manuals, and related materials for administering the Vocational Adaptivity Scale, the Performance Profiling Form, the Functional Assessment Scale and the Background Information Packet.

Training and Professional Consultation

- Project Hire will provide participating service staff of ABC with training on the procedures to be used in the model program, either at the UW-Stout campus during a

summer training program or on site of ABC. Approximately five days will be needed for training during the second contract period.

- Follow-up training and consultation will be provided as requested throughout the project period.

- Staff from Project HIRe will also make visits to ABC to provide periodic on-site assistance and consultation and to meet all clients included in this project. Periodic attendance at case review staffings will also be necessary to study the procedural and applied aspects of providing the community employment program.

Financial Assistance

Project HIRe will provide ABC with $6,700 to be used as site development money to be used during the second contract year. This money may be used for the following types of activities at the discretion of ABC:

- Stipend wages to clients on job assessment sites in the event that a minimum wage is not available to pay them for work performed.

- Transporting people to job sites.

- Payments for supported employment specialists.

- Payments for staff to attend training sessions.

- Reinforcers for exemplary performance by participants.

- Purchase of materials to be used in the project.

- Other expenses directly related to the project as approved by Project HIRe Director at the University of Wisconsin-Stout.

UW-Stout Project HIRe shall protect and defend ABC, its agents, employees and servants from and against all damages, expenses and costs on account of damage to property, injury to or death of persons, including payments made by ABC under Workers Compensation Laws or under any plan of or for employees' disability and death benefits, arising directly or indirectly, out of negligent conduct by UW-Stout Project HIRe, its agents or employees as they relate to the performance of this agreement.

Responsibilities of ABC During the Second Contract Period.

- Continue the Community Advisory Network.

- Continue to provide on the job support to persons placed on community worksites during project year one as listed on the participant list provided to the RTC and the state Vocational Rehabilitation Agency, and provide community-based employment to an additional 4 to 6 traumatically brain injured persons.

- Provide staff time for use in RTC training programs, publications and audio visual productions as mutually agreed upon.

- Develop a written, action oriented plan to actively involve the local public and potential funding sources in the promotion of community-based employment programs for persons with traumatic brain injury.
- Provide a response to a survey to be conducted by staff of Project HIRe at the end of the second contract year to determine the impact of the materials and procedures involved in the project.

ABC shall protect and defend UW-Stout Project HIRe, its agents, employees and servants from and against all damages, expenses and costs on account of damage to property, injury to or death of persons, including payments made by UW-Stout Project Adapt under Workers Compensation Laws or under any plan of or for employees' disability and death benefits, arising directly or indirectly, out of negligent conduct by ABC, its agents or employees as they relate to the performance of this agreement.

Payment Schedule

ABC will receive payment of $6,700 for use during the second contract year of the Project. Payment will be made upon ABC invoicing Project HIRe, Research and Training Center, University of Wisconsin-Stout for three periods with dates and amounts as follows: December, 1989, January, 1990, February, 1990 - $2230; March, 1990, April, 1990, May, 1990 - $2230; June, 1990, July, 1990, August, 1990, September, 1990 - $2240. This money will be considered as continuing site development expenses as well as actual client services during the second contract period. Payment will continue to be make as long as the terms of this agreement are being met.

Period of Contract

The second contract period will be in effect from December 1, 1989 to September 29, 1990.

****

UNIVERSITY OF WISCONSIN-STOUT:

_____ _____

Dale F. Thomas, Ph.D. DATE
Director, Project HIRe
Research and Training Center

_____ _____

John S. Wesolek, Ph.D. DATE
Executive Director,
Stout Vocational Rehabilitation Institute

_____ _____

Mark Skutley DATE
Contract Officer, UW-Stout

****

ABILITY BUILDING CENTER:

_____ _____

DATE

Project HIRe Site Coordinator
at ABC

_____ _____

DATE

Executive Director
ABC